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*Medical Lib.*

# Canadian Public Health Journal

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**PREVENTIVE MEDICINE**

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## SANITATION

IN

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A Typhoid Fever Outbreak

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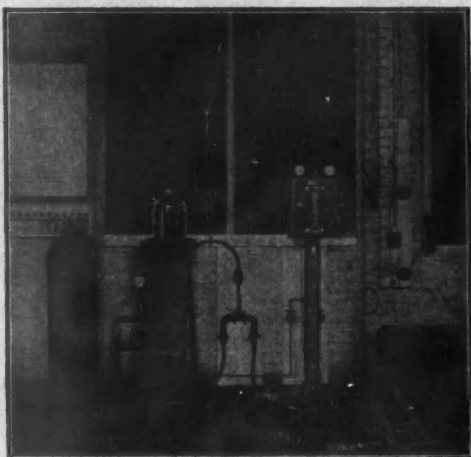
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Racial Origin and Public Health

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## Sanitation in the National Parks

G. H. FERGUSON, B.A.Sc.

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IT is the intention of this paper to give a brief resumé of sanitation in the principal national parks.

As the great national parks become more widely known, the number of visitors, railway travellers and automobile tourists is rapidly increasing, and consequently sanitation in the national parks is an important matter. Tourists from all parts of Canada and the United States visit these parks annually and, if proper precautions are not adopted, the parks may easily become international focal points of disease distribution. Disposal of sewage and wastes and the protection of water supplies are the principal subjects for attention. Considerable attention has also been given to the sanitation of bathing beaches and swimming pools.

To date a check-up on the above points has been made at nine of the national parks, including Point Pelee in southwestern Ontario and Radium Hot Springs in the Columbia Valley in British Columbia.

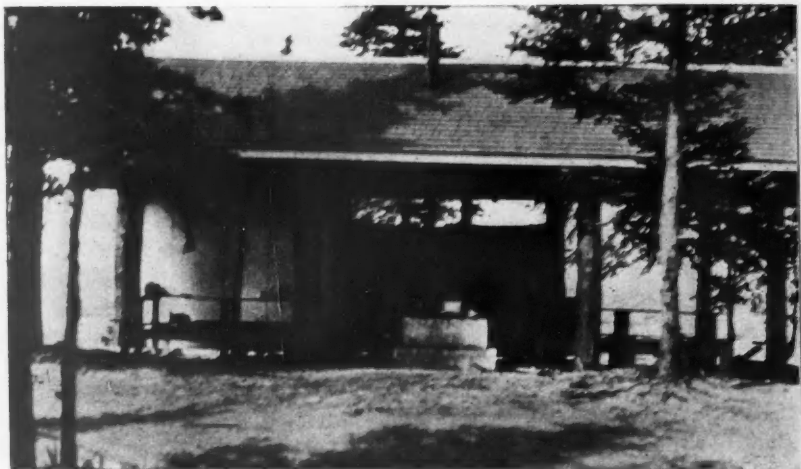
Fortunately, the national parks of Canada have been provided by nature with ample supplies of good water for all purposes, including bathing and drinking. Thus, for instance, at Riding Mountain National Park, Clear Lake is the centre of all tourist activities. It has a length of seven miles and a width of three and one-half miles and is quite deep. The water is cold, clear, odourless and pleasant to taste and supports an abundant fish life in which is included lake trout, pickerel and pike. Clear Lake is used as the source of water supply by many of the campers and tourists.

At Prince Albert National Park, water supplies for drinking and culinary purposes were formerly obtained from a series of shallow wells which for various reasons become subject to more or less serious contamination and are being abandoned and a waterworks is being constructed which will have its source of supply in Lake Waskesui. Lake Waskesui has an area of 27 square miles, an average depth of 50 feet and a maximum measured depth of 75 feet, and supports a large fish fauna such as whitefish, pickerel, pike, ciscoes, ling and perch. The lake has many sandy beaches, but in general the shores are strewn with

boulders and small stones. The prevailing wind is from the northwest and sweeps down the entire length of the chain of lakes of which Lake Waskesui forms a part. The watershed is composed of hills and rolling lands fairly well-covered with second-growth trees.

There are two distinctly separate water supply systems at Jasper, *i.e.*, one that supplies the railway and Jasper townsite with its population of 1,200, and the other which furnishes water to the hotel and other buildings at Jasper Lodge.

The source of water supply for Jasper townsite is in Cabin Lake, which is situated at an elevation of nearly 500 feet above the townsite and arrangements have to be made to reduce the pressure head due to this difference of elevation. Cabin Lake has an area of 75 acres and a



OPEN AIR KITCHEN, BANFF, ALBERTA

capacity as a reservoir of 77,880,000 gallons. Water flows by gravity from Cabin Lake to the townsite through an eight-inch cast-iron main and is thence distributed to the various buildings, houses and hydrants.

The source of water supply for the buildings at Jasper Lodge is in a collecting basin on a stream on the side of Signal Mountain. A six-inch main delivers the water to an elevated steel tank in the rear of the hotel buildings from which distribution lines lead off to the various buildings and hydrants and other outlets.

The water supply for Waterton townsite flows by gravity from the outlet of Cameron Lake, which is a natural reservoir in the mountains about eight miles from the townsite and at an altitude of over 1,000 feet above it. The underlying formation adjacent to Cameron Lake is gravel and rock, so that the runoff soon finds its way into the lake.

Banff as a resort has great fluctuations in its population, varying

from about 2,000 in midwinter to upwards of 10,000 in the height of the tourist season in midsummer. The water supply of Banff has its source in a dam on Forty-mile Creek on the slope of Cascade Mountain. The water is carried for about three miles to the townsite in a twenty-inch steel conduit.

The water supply at Lake Louise is owned by the Canadian Pacific Railway Company. It has its source above the settlement in a mountain lake called Lake Agnes and flows by gravity to the hotel and other buildings and dwelling places.

Radium Hot Springs is located on the banks of Sinclair Creek in the Kootenay National Park. It contains an automobile tourist camp, the Hot Springs bath house and a townsite, all of which are well patronized, especially by travellers on the Banff-Windermere highway.

The water supply has its source in springs in Sinclair Canyon, 4,000 feet easterly from the administration buildings and upstream above the campsites. From the collecting basin the water flows by gravity through a galvanized iron pipe for distribution to the various buildings and other outlets in the townsite and campsite.

In those parks which have a relatively small number of permanent residents, dry-earth privies are in use although more recently chemical closets and septic tanks are being quite freely installed. However, as at Jasper and Banff, where towns of considerable size have developed, it has been found necessary to provide sewers for the disposal of human wastes. In the particular case of Banff, which discharges raw untreated sewage into the Bow River (which in turn is the source of water supply for municipalities farther downstream), it has been recommended that serious consideration should be given to the construction of a modern sewage disposal system such as the activated sludge process. At Jasper the sewage is discharged into a tributary of the Athabasca River and is disposed of by dilution. At Lake Louise there are two small sewerage systems, one for the town and the other for the hotel, cottages and other buildings maintained by the Canadian Pacific Railway.

There are a number of buildings on the townsite with living and sleeping quarters, baths, wash-basins, and other toilet facilities. In addition to the above, during the rush season, upwards of 1,000 persons daily make use of the sanitary conveniences. At the time this was checked up, in 1929, sewage from these buildings was being run through the town sewer into two cesspits located about five hundred feet east of the townsite on the adjacent hillside. As sewage disposal might become an acute problem, it was recommended that these cesspits be superseded by septic tanks with provision for disinfecting the effluent before permitting it to flow into Louise Creek, the natural drainage system of this area,—Louise Creek to be posted with warning signs indicating its contaminated condition and as unfit for drinking in the raw state.

Disposal of sewage from the Canadian Pacific Railway Buildings

is more elaborate and consists of a main sewer which delivers the raw sewage to a septic tank, the effluent from which is chlorinated before being discharged into Louise Creek.

Sewage disposal at Radium Hot Springs is handled by septic tanks and chlorination of the effluent before discharge into Sinclair Creek, which is the natural drainage medium for the area.

Bathing places are available in various national parks, as follows:—

Clear Lake, in Riding Mountain Park, Manitoba.

Lake Waskesui, in Prince Albert National Park, Saskatchewan.

Island Lake, in Elk Island Park, Alberta.

Lake Mildred at Jasper, Alberta.

Linnet Lake in Waterton National Park, Alberta.

Lake Minnewanka at Rocky Mountain National Park, Alberta.

While dressing rooms and toilets are available adjacent to some of these bathing places, much can yet be done towards their improvement so as to be in line with modern ideas respecting sanitation at public bathing beaches.

Swimming pools have been developed at Jasper Lodge, Lake Louise Chalet, Banff Springs, Waterton townsite and Radium Hot Springs. While the waters at Banff Springs and Radium Hot Springs are from natural warm sulphur springs, the waters in the other swimming pools are heated artificially. As the bathing load at all of these pools is at times very large, recommendations have been compiled for their regulation and constant supervision in accordance with modern requirements, including a check on the sanitary quality of the pool water.

It was found necessary to give attention to the collection and disposal of garbage and refuse at various campsites and now garbage is usually deposited in covered galvanized iron containers which are subsequently emptied at the incinerators or garbage dumps. Generally speaking, the unsightly and offensive refuse dump is being gradually but surely eliminated by the construction of modern incinerators. These incinerators do away with numerous complaints regarding smoke and odours that frequently arise from such refuse deposits, particularly where such dumps are improperly located or maintained.

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## Institute on Maternal Care

The Victorian Order of Nurses for Canada is prepared to consider requests regarding the possibility of putting on a two days' Institute on Maternal Care in any section of Canada. Such an Institute may be sponsored by a Provincial University, department or nursing association, a local health department or graduate nurses' association. Not less than fifteen or more than forty may be enrolled in one class. The National Office of the Victorian Order, 321 Jackson Building, Ottawa, will be pleased to give any additional information required.

# Typhoid Fever Epidemic at Essex

A. E. BERRY, M.A.Sc., C.E., Ph.D.,

*Director, Sanitary Engineering Division, Ontario Department of Health*

THE typhoid fever epidemic which occurred in the town of Essex in the early months of 1929 brought to light some points of considerable interest. These concern both epidemiology and engineering practice. Publication of details concerning the outbreak have purposely been delayed. A complete summary of the investigation and findings is given at this time with the hope that it may serve as a preventive against similar occurrences in the future.

This typhoid epidemic was water-borne. Forty-nine cases and no deaths were reported. The fact that the investigation was complicated by a number of unusual factors, and that the contamination of the water supply took place in a peculiar manner lends interest to the data secured at that time.

## *The Water Works System*

The water works system for the town is municipally owned. The supply is secured from deep wells. Two of these, known as the "Garrow wells", are located about three-quarters of a mile outside the town. Others have been sunk near the pumping station, but these are seldom used. The Garrow wells have a depth of approximately 150 feet and have been constructed within twenty feet of one another. From here the water flows through a six inch pipe, by gravity, to reservoirs at the town pumping station. This gravity main passes, for the most part, through fields and along a roadside. It is fairly remote from sources of contamination. At the pumping station there are two separate reservoirs. The new one was constructed about five years prior to this outbreak. In this the water is aerated to drive off hydrogen sulphide. From here it flows to the old reservoir built under the pumping station and consisting of two compartments, both cylindrical in shape. The smaller compartment is entered first and from here the water flows to the larger one. This latter reservoir is 20 feet in diameter and 25 feet deep. From this point the water is picked up by the pumps and delivered to the distribution system and elevated tank. In addition to the regular route of water to the new reservoir, it was also possible, by means of a by-pass, to deliver the supply from the Garrow wells directly to the old reservoir. This by-pass, however, had not been used for many months prior to the outbreak.

*Quality and Protection of Water Supply*

The water supply for the town as it comes from the wells has always been of good quality bacteriologically. The wells are deep and are protected against surface contamination. The water from all of these wells, has however, been rather unpalatable owing to the presence of hydrogen sulphide. The wells at the pumping station are more heavily charged with this than the others and consequently are not used except when an insufficient supply can be obtained from the Garrow wells. This condition occurs generally only during the canning season in the summer. In order to overcome this unpalatable condition the water is aerated in the new reservoir by blowing air through diffuser plates in the bottom of the tank; this has been very effective in removing the hydrogen sulphide.

The rock formation at the pumping station is reached at a depth of about 110 feet from the surface. The wells extend to a depth of about 150 feet. The water from these wells showed so much hydrogen sulphide that it was the practice of the plant operator to pump them for several hours into the sewer before the water was turned into the reservoir. This sewer connection led to a storm sewer some short distance away from the wells. The walls of the old reservoir were all considered to be watertight. The new reservoir was also built in a way which fairly well precluded much danger of leakage. Any leakage here would also be away from the reservoir rather than towards it. The old reservoirs had, on a previous occasion, been found to leak. To overcome this they had been concreted and were said to be completely waterproof. The water level in this reservoir varied with the demand on the system. Ordinarily in the winter season it was quite close to the top. By the ordinary visual examination it would be impossible to detect that this reservoir was not watertight. As a previous precaution against any leakage here, chlorination of the water supply had been practised for a period of some years before this epidemic. Great difficulty was experienced, however, owing to the large quantity of hydrogen sulphide present. The chloride demand was in the neighbourhood of 30 parts per million when the supply was not aerated. Aeration materially reduced this. In view of the many favourable water analyses, and the fact that the old reservoir had presumably been made watertight, the local officials had abandoned chlorination some time before this outbreak.

*The Milk Supply*

The milk supply for the municipality was largely taken from one dairy. This was said to be pasteurized. This dairy supplied 293 houses, or 84 per cent of the residences in the town. The population of the municipality was in the neighbourhood of 1800. Seven other small dealers delivered raw milk but supplied only 57 houses. On examina-



tion it was found that the pasteurizing equipment at the dairy was very faulty, and that it would have been possible for contaminated milk to get through the pasteurizer and to be present in the bottled supply. The bottles were also capped by hand and if a carrier had been working in the dairy a serious condition might easily have arisen.

### *Epidemiological Investigation*

The attention of the Department of Health was first drawn to this condition by some blood samples sent to the laboratory for examination. When these proved to be positive for typhoid, the District Officer of Health went to Essex and, recognizing the apparent complications, asked the Department to have the Epidemiologist and Sanitary Engineer go with him to complete the investigation. At this time action had been taken to protect both the water and milk supplies so that the possibility of further contamination from these two sources was under control. On February 18th, 1929, the investigation began. Complete case histories were obtained from all those who had contracted the disease.

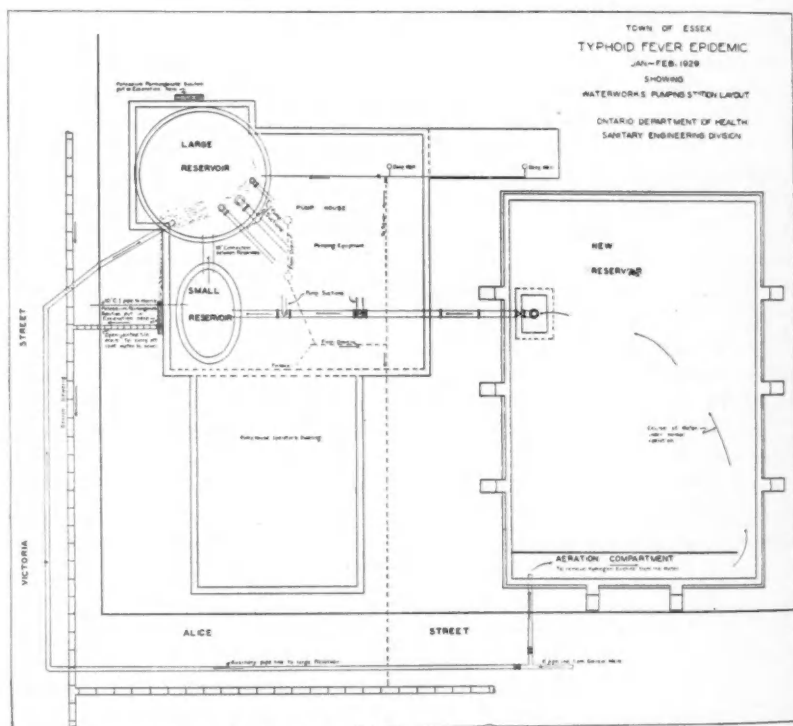
#### FIRST DAY'S INVESTIGATION (FEB. 18TH, 1929)

During the first day twenty-nine case histories in all were secured. Twenty-four of these had been reported previously and the other five were new cases reported that day. From this investigation it was obvious that the only common possible sources of infection were the milk supply and the water supply. An analysis of the day's findings gave little lead as to which of these sources might be the likely one. All cases had been using the same water supply. There were practically no private wells in town. Similarly, all cases had been taking milk from the main dairy. This latter condition together with the fact that the equipment was faulty and that the water supply had even very recently shown satisfactory analyses, led the milk supply to be regarded with the greater suspicion. In addition to this it was found that the dairy had engaged a new delivery man one month prior to this. This man gave a history of having had typhoid fever seventeen years before. None of the other employees at the dairy gave any record of having had the disease. The new employee declared that he had done no work in the dairy but had spent all his time on the delivery wagon. He had nothing to do whatever with the bottling, capping, or operating the pasteurizer. It was also found that two new producers started to supply milk to this dairy about the first of the year. Blood samples were secured during the day from all the employees at the dairy. They were forwarded to the Provincial laboratory on the late train that night. Next day these were all reported as negative. This, however, was not to be regarded as conclusive evidence in the case of the latest employee. This man was

sent to the hospital for a few days where stool examinations could be made and conclusive evidence secured to prove or disprove that he was a carrier.

### SECOND DAY'S INVESTIGATION (FEB. 19TH)

On the 19th of February the investigation was continued and additional case histories secured. Four new cases developed this day bringing the total up to thirty-three. One of these new cases showed some probability of not using the pasteurized milk supply. The household had, however, on some occasions, supplemented their normal raw milk supply with the pasteurized milk. As a result of this, in the thirty-three cases reported to date, none were definitely dissociated from the pasteurized milk supply. Blood samples were also taken during the day from each milk producer supplying this dairy. Several of these gave histories of having had typhoid fever but no recent cases were found. These blood samples were forwarded to the laboratory on the night train and reported upon next day. All were negative.



PLAN OF WATERWORKS, ESSEX, ONT.

Further investigations were made on this day in connection with the water supply. No additional information was brought to light. Bacteriological findings were all satisfactory and there was no indication from the investigation to date that the water might possibly be contaminated. At the end of the second day's inquiry the milk supply still appeared to be the most likely cause.

### THIRD DAY'S INQUIRY (FEB. 20TH)

On the morning of the 20th three new cases developed and all except one were on the same milk route. This party stated definitely that he had not used any milk from the dairy under suspicion but he had, however, been out of town most of January. He had returned for the period between the 18th to the 23rd of the month. On the 23rd he again left to look after his brother who, he said, was ill with influenza. He also stated that his brother had suffered from typhoid fever several years before. From this it would seem that there was reasonable chance that this patient had contracted typhoid fever in this way. Later in the day another case was reported. This was a boy 18 years of age who was living in a village near the town. He had visited Essex on January 19th and had eaten two meals at the home of one of those now suffering from typhoid. He stated definitely that he had had no milk whatever but that he had taken large quantities of water. At this time, with thirty-seven cases reported, there was still no conclusive evidence as to the exact cause of the epidemic. The fact that no typhoid carriers had been found among the milk producers or the operators of the dairy had done much to relieve the doubt concerning the milk supply. On the other hand all cases of typhoid were on the same water supply and might also be said to be on the same milk supply. All of these cases might have been accounted for if the one dairy had been the source.

Investigations were now continued and further extended at the water works pumping station. It was obvious that an effort had to be made to check the tightness of the underground or old reservoirs. It was felt that if either of these were leaking there would be a possibility of surface contamination reaching the water supply. There was, however, as far as information was available, no sewer nearer the reservoir than approximately thirty feet. The intervening ground was also extremely heavy clay and not likely to permit much water penetration. This sewer was regarded as a storm sewer although undoubtedly some sanitary connections had been made. In an effort to determine the watertightness of the reservoir, excavations were made at different points through the frozen ground around the edge. The reservoir had been pumped down during the previous afternoon and contained only two or three feet of water. Examination from the inside did not show any leaks. The excavations on the outside of the

reservoir were quite difficult and required a good deal of time to complete. The first excavation sunk to a depth of about five feet on this day was made at a point where the inside wall looked somewhat damper than at other points. It was impossible, however, to determine whether this dampness was due to water coming in from the outside or to the natural dampness of the reservoir. At the end of the day this excavation had been completed and instructions were given to make a further opening on the other side of the reservoir. Into the first excavation water was poured to a depth of two or three feet. To this was added a quantity of potassium permanganate sufficient to give a distinct pink colour. This was the only dye available in town. This was permitted to stand for a number of hours and no change could be noted in the level of the water or in the condition of the reservoir on the inside. The third day's inquiry brought forth no conclusive results. Indications however began to point more strongly to the water supply than to the milk, but how the infection had gained entrance, if at all, was still very much in doubt.

#### FOURTH DAY'S INVESTIGATION (FEB. 21ST)

On the following morning, February 21st, work was continued on the new excavation. In the meantime six new cases had been reported. These were definitely not all associated with the dairy but all were using the town water. This was the first conclusive intimation that the water supply was the likely cause rather than the milk. The second excavation at the reservoir was completed by the middle of the afternoon. In sinking this hole a pipe was severed, but was not reported by the workman. This pipe of open jointed field tiles took the water from the roof of the pumping station and delivered it to the storm sewer on the street. There was quite a perceptible fall from the building to the sewer. In view of the surroundings no great value was placed on this information at the time. When the excavation had been carried down to about five feet, water was added and potassium permanganate introduced. On this occasion the water level would not rise above a certain point irrespective of the amount which was added. Examination of the inside of the reservoir shortly after this showed the presence of pink water. Definite information was at last at hand to show that the reservoir was leaking at one point. The problem was now to find where contamination could find its way through this opening. The pollution was necessarily considered to be intermittent because of the favourable water analyses found from time to time. The records at the water works pumping station and data which could be secured about town indicated that a heavy rain storm and flood had taken place on the 17th and 18th of January. Several of the sewers had backed up. This was noticeable in the vicinity of the pumping station. It seemed obvious from this that the storm sewer had become

plugged on that occasion and that sewage had backed through the pipe connecting this sewer and the roof water. This had passed through the open joints of the drain and had followed along the outside of the reservoir through the same course that the coloured water had taken when it found the opening into the reservoir. This opening was fairly close to the top of the reservoir, and was just below the old pipe which had brought the water from the Garrow wells previous to installation of the new reservoir. In waterproofing the old reservoir the connection around this pipe had not been made watertight. From this point the contamination had spread, without difficulty, throughout the entire distribution system.

An examination of all the data indicated conclusively that the water supply was the source of the infection. The situation was most unusual and one which would very rarely be foreseen. The fact that underground reservoirs must always be regarded with suspicion led the investigators to look closely into this question. It was more by chance than anything else that the very point from which the pollution spread was cut by the excavation.

The lessons to be drawn from this epidemic may be summarized as follows:

(1) Where the same dairy and the same water supply are in general use in a municipality a typhoid epidemic must be investigated in detail to prove conclusively the source of infection.

(2) Milk supplies, even though supposed to be pasteurized, must not be overlooked as a possible cause.

(3) Underground water reservoirs must always be regarded with suspicion and should be examined closely and frequently to detect any possible leaks.

(4) Where any doubt exists whatever, a public water supply should be chlorinated or treated to eliminate any chance infection such as this.

(5) The fact that typhoid fever has not occurred for some time is no indication that it will not break out at any time through such a mishap as this.

(6) The existence of old pipes, concerning which there is little record, is always dangerous about water reservoirs and supplies.

In conclusion, too much emphasis cannot be placed upon the valuable co-operation and support received from the Medical Officer of Health and the local board. Dr. Keane, Medical Officer of Health for the town, was unfortunately ill at the time. His work was being carried on by Dr. Brien. The local board in conjunction with the District Officer of Health, Dr. McNally, had taken, at the very beginning, all steps necessary to prevent further spread through the water or the milk.

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# Rural Sanitation in Saskatchewan

R. H. MURRAY, C.E.,

*Director, Division of Sanitation  
Saskatchewan Department of Public Health*

THE work of the Division of Sanitation of the Saskatchewan Health Department falls under two general headings; namely, sanitary engineering and rural sanitation. The sanitary engineering activities of the department include the examination of all plans, specifications and information in connection with municipal water supplies, sewerage and sewage disposal systems, the frequent inspection of those systems with a view to ensuring that the public health is fully protected, the supervision of the engineering features of milk pasteurizing plants in the province in order that the consumer may be assured that pasteurization is carried on in a scientific manner, advice to institutions and individuals in the matter of the sanitary quality of water obtained from wells and other sources, the proper treatment of creamery and trade wastes and the siting of hospitals and other public buildings throughout the province with a view to providing adequate water supply and drainage facilities.

This communication will deal only with rural sanitation, that is, the efforts which the Department of Health in Saskatchewan is making to bring about a higher status in the sanitary environment of people living in towns, villages, hamlets and on the farm.

The Hon. Dr. F. D. Munroe, Minister of Public Health, announced early last year that, in order to give more intensive and efficient health service, it was proposed to decentralize the inspection work of the Department and from May 1st, 1930, the four district sanitary officers, who until then had their headquarters in Regina and endeavoured to cover the whole province each year, had four additional inspectors added to their number. There are now eight sanitary districts corresponding in a general way to the eight districts which have been established by the Department of Highways.

These districts include the entire settled area of the province. The district sanitary officers have their headquarters in the warehouse buildings which have been erected by the Department of Highways. Each official is provided with a departmental car for the carrying out of his duties. The sanitary officers make a complete sanitary survey of all conditions affecting the health environment of each municipality and confer with the local medical health officer and Board of Health as to the measures which should be adopted to prevent the spread of communicable disease in the community.

At the same time scores are awarded to the municipalities in accordance with the health measures adopted by the local authority and the



annual publication of the names of those towns and villages which have taken active steps to protect the community from communicable disease is creating a spirit of friendly competition and rivalry which is bringing about excellent results.

The summer resorts of the province, which are also scored, are becoming more popular each year and, with the almost universal use of the automobile, many thousands of people are visiting these resorts over week-ends and public holidays. The sanitary officers are at the present time concentrating on these resorts in an endeavour to provide safe water and milk supplies and satisfactory methods of waste disposal for the coming season.

So far as the water and milk supplies are concerned in our summer resorts it is our aim to attain as high a standard of safety for these as prevails in the city from which the holiday-seeker comes.

#### *Supervision of the Water Supply*

The lack of precipitation during the past two years has affected seriously the water supply situation in many parts of the province. Communities which depended on their supply from streams and surface sources have been compelled to seek new sources of supply underground. The great majority of rural water supplies are obtained from wells and it is the policy of the department, through the district sanitary officers, to encourage towns, villages and hamlets to establish municipal wells, that is to say, wells which are owned, controlled, and supervised by the municipal council.

The greater part of our rural population has to find its own water supply or is dependent upon the town or village well, which may be poorly constructed or indifferently maintained. The department has accordingly directed its efforts towards giving all the advice and assistance possible to the farmer in order that he may obtain a safe water supply.

Samples of domestic drinking water from any public or private supply in the province are examined free of charge, the only conditions imposed upon the sender being that he shall furnish the department with a full description of the surroundings and construction of the well and take the sample in accordance with instructions sent to him and forward it in a specially sterilized container furnished by the department. This service is proving very popular and about 1,000 reports are given by the Division of Sanitation every year on the sanitary quality of domestic water supplies throughout Saskatchewan with recommendations as to how they may be improved.

#### *Milk Supervision*

Much practical work is being done by the sanitary officers to improve conditions under which milk is sold in the province. One thousand and ninety-six inspections of dairies were made last year and

wherever possible sediment tests were taken on the ground and demonstrated to the dairyman. Full reports have been submitted on the sanitary condition of these dairies. A printed card of instructions for milk producers, which sets out very clearly what is required to obtain a clean and safe supply, is left with the producer or posted in his dairy barn. Dairy men are urged to have their cows tested for tuberculosis and municipalities are encouraged to pass a by-law which calls for compulsory tuberculin testing of cattle and the inspection of dairy premises, by an official appointed by the municipality, before issuing a licence to any milk vendor.

The economic situation has rendered difficult the accomplishment of much improvement in the premises of dairy men during the past year. It has, in fact, considerably embarrassed the progress which was being made and although little has been accomplished in the matter of the construction of new dairy barns and the purchase of new equipment, cleanliness in the production and handling of milk has been insisted upon.

#### *Supervision of Food*

The installation of artificial methods of refrigeration has marked a great advance in the methods of storing and preservation of foodstuffs, particularly in the rural districts. Meat stores, slaughter houses, bakeries, restaurants and other places where food is stored and sold, have been under close inspection. The department is now in possession of a complete list of all the restaurants in the province. Owing to reorganization, it was not possible to carry out the intensive inspection last year which may be looked for in 1931, but a general survey was made of the situation and the sanitary officers have already been successful in eliminating common towels and common drinking cups from practically every restaurant under their jurisdiction.

#### *Disposal of Waste*

Except in the larger centres of population there is a noticeable absence of by-laws in existence providing for the efficient conservation, removal and disposal of waste material. Methods are haphazard and in a great many cases the responsibility for removal of waste material to the local waste disposal ground still rests with the individual and is unsatisfactory. The department is urging municipalities through its district sanitary officers to pass two distinct by-laws in connection with the disposal of waste material: the first, a by-law dealing with scavenging providing for the installation of a system of garbage containers and the removal of the contents of these by an employee of the municipality at regular intervals to the waste disposal ground; secondly, a by-law which will provide for a uniform system of outside closets.

The location of waste disposal grounds throughout the province is, on the whole, good, but the same cannot be said regarding the condition

in which these areas are kept. Many are still "nuisance" grounds and much educational work has to be undertaken before municipalities will really interest themselves in keeping these places of disposal in a sightly and inoffensive condition.

#### *Supervision of Hotels and Boarding Houses*

This is the first year during which the Division of Sanitation has been charged with the responsibility of inspecting and supervising the sanitary arrangement of hotels and boarding houses throughout the province. However, considering the present limited number of the travelling public, the general sanitary condition of these places of accommodation has been found to be good. In any case where the department has, on the advice of the district sanitary officer, threatened to close down the premises, it has not been necessary to give effect to this penalty as the necessary improvements have been quickly carried out. The department is keeping in close touch with the commercial travellers' organizations and is prepared to act with the utmost expedition in investigating any complaints received from the travelling public.

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## Sanitary Control of Summer Resorts in Quebec

THEO. J. LAFRENIÈRE, C.E.,

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THE province of Quebec, with a population of 2,600,000 inhabitants is essentially rural in character. This population is divided amongst 1430 municipalities and 50 per cent of it is contained in 32 cities and towns of over 5000 inhabitants. The organization of the Provincial Bureau of Health takes into consideration the special conditions created by a large number of small centres, and provides for rural sanitation on an extended scale.

As early as 1912, the 85 provincial counties were divided into sanitary districts which soon numbered twenty, with a full-time medical officer in charge of each district. With the advent of the system of county health units, the district inspectors were requested to organize the counties under their jurisdiction into health units, and at the present time, twenty-nine counties are thus organized into twenty-three health units, and two more units shall operate under this system after the first of July of this year.

The personnel of a health unit comprises a medical officer, a sanitary inspector and two or three health nurses. As the county seldom contains more than twenty municipalities, the character of the work is essentially rural.

The sanitary inspector, under the direction of the medical officer, a physician who has usually taken special post-graduate training in public health from a recognized school, looks after the sanitary conditions of his district, and problems requiring engineering knowledge are referred to the Sanitary Engineering Department of the Bureau. The inspector is always in contact with the various municipal authorities of his district and acquainted with the quality of the water supplies, either public or private, and the sewerage facilities available.

It should not be inferred that the creation of rural health units has solved all the problems pertaining to rural sanitation; but improvements have been obtained where most needed and conditions requiring remedial measures are brought repeatedly to the attention of the local authorities, and with such insistence, that it is impossible for the latter to forget them.

This lengthy review of the organization of the Provincial Bureau of Health shows that in looking after the health conditions of the small municipalities in general, the sanitary control of the summer resorts is obtained as part of the regular work of the Bureau. In fact, most of the places patronized by the summer residents are small country towns, favourably located on the shore of a river or lake, or in the mountains.

These towns are usually provided with a safe water supply, and a more or less satisfactory sewerage system.

The food obtainable in such places is wholesome, and the milk is fresh. However, the body of water may not always offer the guarantee of cleanliness required for safe bathing, as disposal of sewage by dilution is largely practised in the Province. Sewer outfalls are so located or of such a length as to minimize the degree of contamination, but the possibility of infection exists in several places.

Summer cottages in unorganized municipalities present a different problem. They are ordinarily scattered about the lakes in the Laurentian Mountains or in the hills of the Eastern Townships. No public water works are here available, and wells or springs have to be used as a source of supply. The drinking water is very seldom taken directly from the lake and the house sewage is usually disposed of in the ground. The well is often poorly constructed or the spring improperly collected, but the cottages are so separated, that it is possible to obtain a satisfactory distance between the well and the cesspool or cesspits. The soil, which is generally sandy, offers adequate facilities for the disposal of the wastes, and it is understood that overflows from cesspools should not be carried into the lake. However, necessary

improvements to prevent surface wash from reaching the well or the spring are not easily obtained.

The number of summer camps has increased lately, and it may be advisable to resort to licensing in order to establish a better control over them. The camps controlled by responsible organizations are well installed and well kept. They bring their problems to the county health officer or directly to the Division of Sanitary Engineering, for guidance. They request repeated analysis of the water supply and examination of the sanitary conditions of the camp.

The problem is different with the private camps, which are often in charge of a director whose interest in physical education leaves little place for sanitation. When such a camp is brought to the attention of the sanitary authorities, it has frequently been in operation for some time, and serious modifications are often required to improve the sanitary conditions.

The tourist camp problem is of a different nature. The location is seldom chosen with a view to sanitary facilities, but rather for scenic beauty or convenience. Such camps, whenever possible, should be placed near towns and served by the public services of the towns. Where this is not possible, a detailed inspection of the camps becomes necessary. The practice followed in several parts of the United States, requiring a permit to operate such camps, is commendable and should be followed where they are numerous.

In the province of Quebec, the villages along the main highways are seldom more than a few miles apart, and hotels offer good accommodation to the motoring tourists. The camps are few in number and the season is so short that their multiplication is not expected. However, it would be advisable to require that a permit be obtained before the construction of such camps is allowed.

The sanitary conditions in summer resorts of Quebec are satisfactory, and the control is obtained through the ordinary organization of the Provincial Bureau of Health whose activities are largely rural in character. However, those who are moving to the country during the summer months should take ordinary precautions to safeguard their health. The quality of the drinking water in country hotels is well controlled, but wells, springs and creeks along the roads should not be trusted. Bathing in streams and lakes should not be indulged in, unless it is known to be safe.

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# Summer Problems in Dermatology

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WITH the approach of summer and the living of a more outdoor life, certain seasonal conditions and diseases are presented to the dermatologist. The lessening of the amount of clothing exposes more of the body surface to external influences which cause various skin manifestations. The sun and some forms of plant and insect life are very definite skin irritants, and the purpose of this paper is to briefly describe those skin diseases commonly caused by them.

## *Ulterior Effects of the Sun*

Exposure to the sun's rays results in the condition commonly known as *sunburn* or solar erythema, a reaction that varies greatly with the individual. The effect is produced by the ultraviolet rays from the sun, and not by the heat rays. Blondes are much more sensitive than brunettes. In sensitive individuals the skin becomes red almost at once, with a local feeling of burning, followed by the development of blisters; in others, such reaction may be delayed until the following day. As resolution takes place the epidermis desquamates, and there is increased pigmentation of the skin. The brunette type after repeated exposures becomes very pigmented, or as we say, "tanned." In certain individuals this tanning process occurs so rapidly that no burn takes place at all.

While commonly regarded as of little importance, sunburn may cause considerable toxic reaction with fever and malaise, while the discomfort occasioned the sufferer is not to be lightly regarded. Infection of the blebs may occur, leading to impetiginous infections or a cellulitis. Repeated damage to the skin in this way may lead to the development of chronic conditions such as vitiligo, lupus erythematosus, keratoses, warty growths, and even epithelioma. Certain persons who from their occupation are more readily exposed to the sun, such as farmers, sailors, fishermen, are subject to these degenerative skin changes caused by too much sunlight.

From the standpoint of *prevention*, holiday-seekers should be advised to expose the skin to the sun for gradually increasing periods from day to day, so that if possible they may become tanned without sustaining a burn. Five to ten minutes to begin with is quite sufficient. If it is desired to avoid sun effects large hats and veils may be worn, the latter being red or black in colour. Many women find that repeated "tannings" make the skin take on a senile and wrinkled, dry appearance,



and for these the application of creams containing quinine hydrochloride, or bismuth subcarbonate in 10 per cent strength may be recommended. These substances absorb the ultraviolet rays and materially diminish the effect of the sun.

The *treatment* for sunburn after it has developed is, by the application of soothing ointments, one of the best, being the official B.P. ung. aq. rosae, or "cold cream." Ice cold liquid paraffin applied to compresses to the inflamed parts is also a useful therapeutic agent. If large blebs form they should be incised and a dressing applied as in the treatment of other burns.

*Freckles* or lentigo are yellowish brown or black pigment spots occurring on the face and elsewhere, due to exposure to sunlight. Blondes are more commonly affected; children and adolescents are more likely to exhibit this phenomenon than adults. In some patients the spots occur every summer, disappearing during the winter. Freckles may be removed by causing exfoliation of the epidermis. For this purpose a lotion containing bichloride of mercury, three or four grains to the ounce of alcohol or glycerine, applied two or three times a day is useful. When peeling begins the application is stopped for a few days, and then repeated.

#### *Poison Ivy*

The juices of certain plants are irritating to the skin of susceptible individuals, producing a rash which is called "dermatitis venenata." The one most frequently encountered in this country is the poison-ivy, or *Rhus Toxicodendron*, a creeper commonly met with in rural districts and sometimes even in the city parks. The leaves are formed of three green leaflets, with irregular margins. The plant closely resembles the common Virginia creeper, except that in the latter the leaf consists of five leaflets. The sap of the plant is the source of the irritant and an active principal called "lobinol" has been isolated as the specific cause.

After contact with the plant it takes from several hours to several days for the individual to become aware of the skin irritation, depending on the degree of susceptibility. It is a popular but erroneous idea that some people get ivy poisoning simply by being in the neighbourhood of the plant without any actual contact with it. Every part of the plant is probably irritating so that even a stem or a piece of root may be the exciting cause of the eruption.

The rash usually comes first on the hands, although any part may be affected if the victim has sat on it or has walked through it barefoot or wearing very thin stockings. Every variety of cutaneous lesion may occur,—erythema, papules, vesicles and pustules, accompanied by more or less burning and pain, which in many cases is very severe and prevents proper rest. If the hands are affected, the dermatitis may be transmitted to other parts, the face, particularly the eyelids, and the

male genitalia showing great swelling and oedema. Occasionally constitutional symptoms develop, the kidney function becoming impaired and the digestive system deranged. In medical literature only three deaths from ivy poisoning have been recorded.

As a *preventive measure*, if one has reason to suspect an exposure to poison-ivy after an outing to the woods or beaches, thorough washing with soap and warm water followed by a mopping of the skin with alcohol will remove the volatile oil which is the exciting agent. Ordinary kitchen soap, which is strongly alkaline, is the best to use. Needless to say, authorities should take the necessary steps to eradicate this noxious plant from public parks and playgrounds.

The dermatitis having once been established, soothing astringent applications are indicated. Ferric chloride in five per cent aqueous solution applied to the parts is a most useful remedy, as is also potassium permanganate, five per cent, sponged upon the affected areas. Both these, of course, stain the skin, which is sometimes an objection. Compresses of liquor plumbi subacetatis dil., or liq. alumni acetatis are soothing, or fluid extract of grindelia with five to ten quarts of water. The dressings should be changed and discarded frequently in order to avoid reinfection.

When the acute stage has subsided and desquamation is taking place, soothing ointments such as ung. aq. rosae may be applied.

A home remedy of value is a poultice made with the leaves of the jewel-weed, a shrub frequently found in conjunction with poison-ivy. It has small bright green leaves and yellow flowers resembling the snapdragon, and this may well be used when other remedies are not available.

Certain other plants may also cause a dermatitis in susceptible persons, the ordinary tomato plant for example, but the members of the *Rhus* species are all that need be considered in this article, the clinical features being essentially similar.

### *Insect Bites*

During the early part of the summer particularly, certain insect pests are very abundant, and may cause much discomfort and even serious illness among susceptible individuals. The black-fly (of the genus *Simulium*) comes with the warm weather, in our northern woods, but by the end of June, the greater number have disappeared. Its bite is usually painless, often followed by a slight haemorrhage and purpuric spot, which a few hours later becomes an inflamed papule which is itchy. This dries up into a crust which finally drops off, leaving a whitish scar-like spot. The adjacent glands are frequently enlarged. A very common place for the insect to attack is just behind the ear over the mastoid region, and the resulting swelling of the cervical glands may be quite marked.

The mosquito (*Culex auxifer*), which is so prevalent wherever there

is stagnant water, whether in town or country, causes an erythematous or urticarial lesion, varying considerably in different persons, some having either an acquired or natural immunity, while in others a severe irritation lasting several days may result.

Other insects which may cause skin damage are bees, wasps, ants and spiders. In some cases the effect of these may be quite serious, death having actually occurred from the stings of bees and wasps. The usual lesion produced is urticarial or wheal-like. Spider bites in some cases cause serious infected wounds with constitutional disturbance.

The treatment of these various bites is by alkaline or anti-pruritic lotions such as bicarbonate of soda, one teaspoonful to one pint of water; carbolic acid in the same strength; ammonia water, a common household remedy, is useful. For preventive measures a two to three per cent solution of menthol or oil of eucalyptus applied to the exposed parts of the body is very useful. For mosquitoes, oil of citronella dabbed on the exposed parts is a splendid means of keeping the insect at a proper distance.

While perhaps not strictly coming under the scope of this communication, it must be remembered that in summer camps care should be taken that none of the inmates are suffering from such relatively common parasitic skin diseases as pediculosis or scabies. Impetigo contagiosa must also be looked for, particularly in children's camps, and when one considers the rapid spread of this skin infection, great care should be taken in the medical examination of those seeking admission.

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## Poison Ivy Control

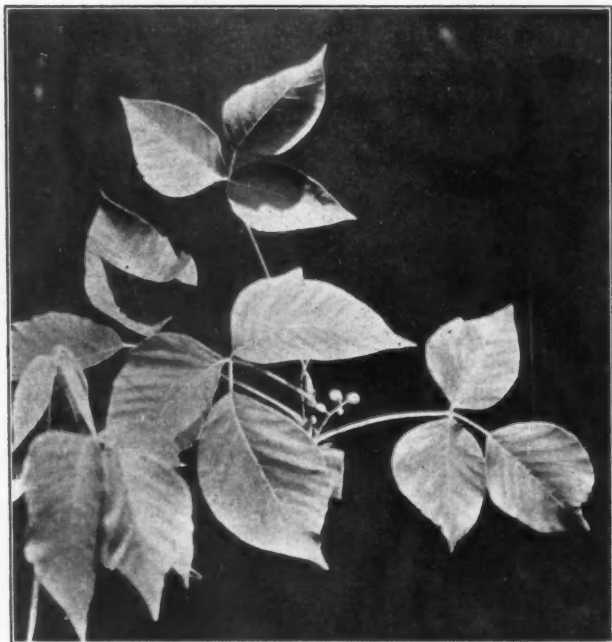
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THE poison ivy plant, if not familiar to most people by sight, is at least known through its poisonous effects. It is easily recognized by its leaves, which are shiny and fairly firm to leathery in texture and are arranged in threes, somewhat similar to the strawberry plant, although entirely different in other respects. It generally has a low, bushy growth, but it occasionally climbs up fences and to quite a height on trees.

The most common method of control of this plant is by cultivation. Fresh air camps, etc., which have this menace, generally control it by hoeing. Care should be taken when working amongst the ivy to pro-

tect the hands or exposed skin surfaces. Gloves should be worn or the hands should be washed with a five per cent solution of ferric chloride, allowing it to remain on. If contact has been made with the plant without this precaution being taken, scrubbing with laundry soap under running water is recommended to remove the volatile oil before it penetrates.



POISON IVY

A method of control well worth trying consists of the use of calcium chlorate, *not* calcium chloride or chloride of lime as is often supposed. The principle by which it works is that the chloric acid penetrates the tissues of the plant, gets into the sap and disorganizes growth. As used dry, it is dusted on lightly when the leaves are damp with dew or rain so that it will not slide off. Its affinity for moisture is so great that very soon the white dust disappears and drops of moisture are seen in its place. As a spray, one pound is sufficient for one gallon of water. A forcible spray is better than a mere sprinkling. The chemical acts quickly; in two days the leaves are withered and finally the stem is shrivelled and the whole plant apparently dead.

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# Sanitation in Ontario Summer Resorts

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**A**TTRACTIVE holiday centres are numerous in the province of Ontario. These offer a wide choice to the vacationist. Lakeland regions are abundant for those who prefer to reside by the water. Delightful summer cottage areas are to be found at numerous points and an adequate number of these are within easy reach of the centres of population. "Fresh air" and similar camps are growing in numbers. These are operated both privately and by various charitable, church and service organizations. To all of these, each year, come throngs of urban dwellers for a well-earned rest or a change of environment, including fresh air, glorious sunshine, and nature at her best. In addition to these, the holiday seeker who sees a motor trip as his choice can find highways and tourist accommodation to satisfy his every need.

Summer vacations are meant to pay dividends in health returns. This can only be accomplished when a sanitary and healthful environment is provided. This is not always easy. Two factors must be considered. First, the urban dweller is accustomed at home to health protective measures requiring little thought or initiative on his part. On vacation he is in a new and different environment. Second, modern sanitary measures in rural areas, occupied for but a few months of the year, are generally difficult to provide. These conditions must be recognized by health organizations, as well as the individual himself. The function of the former may well be directed towards safeguarding the environment, particularly with respect to sanitation. The individual must learn to take advantage of that protection, and to follow the rules of health.

In Ontario the Provincial Department of Health exercises supervision over recreational facilities. Motor tourist accommodation is not for discussion here. The Department carries out periodic inspection of fresh air camps, summer resorts, and similar facilities for the vacationist. The fresh air and similar camps are examined but not licensed. The operators of these are anxious to have advice from the Department in matters of sanitation, and in the case of new camps, or where any major changes are contemplated, inspections are made with the operators before the season opens. In the more thickly populated lakeland regions of the Province special attention is given to sanitary matters. Engineers of the Department, together with the District Officers, are engaged in this work. Continuous supervision is maintained during the vacation period over the more populous regions such as Georgian Bay, Muskoka, Lake of Bays and others. Engineers

with temporary headquarters in these areas are on duty, and direct their attention to the many problems which arise.

Sanitation in summer resorts involves water supplies, sewerage, refuse disposal, milk supplies, food supplies, water pollution and all related matters.

### *Water Supplies*

Drinking water for summer resorts is mainly from one of two sources; namely, wells or surface supplies. Where wells are in use, it is generally a question of protection at the top. The owners are advised



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by the Department's engineers in connection with this. Surface waters, drawn largely from lakes, are for the most part of good quality except as influenced by shore pollution and surface drainage. Individual cottagers secure their supply some distance from shore, or protect it by boiling or chlorination. A small two-bottle chlorine outfit distributed by the Department is very useful for this purpose. Hotels and other places having a pressure water system have been installing regular chloride of lime systems for treating the water. Nearly all the large water supplies in these areas are now chlorinated. Protection of the raw supply is practised carefully for the others.



*Sewerage*

Disposal of sewage from summer areas is often difficult. Outdoor privies, chemical toilets, and water-carried systems, are in use. Where the former are used, pails are recommended. Chemical closets are now in use in a number of camps and cottages. Disposal of the effluent from septic tanks is difficult on rocky formations where little or no soil is available. The effluents from tanks are not permitted to discharge directly into these waters. Where soil is not present the effluent from the tank can be treated on an artificial bed of gravel or stones. Local conditions frequently lend themselves readily to the construction of such a bed. An effort is made to ensure that all hotels, boarding houses and private residences treat the sewage properly and thus prevent undue contamination of the waters. The boats navigating these waters are also required to treat the sewage.

*Refuse Disposal*

Proper disposal of refuse in summer resorts makes for better appearance and materially aids in controlling the house flies. Departmental officials endeavour to see that receptacles are provided and that proper disposal of the garbage and refuse is practised. Burning in home-made incinerators has been found quite effective for this work.

*Milk Supplies*

Protection of milk supplies is one of the difficult major problems for summer resorts. The local supply is often so inadequate in quantity that sale is assured regardless of the treatment, or supervision given in the production. Pasteurization is not a financial success unless the population is large. The summer areas are generally too remote from pasteurizing plants to secure regular delivery. Under these conditions canned milk is used, and the fresh supply is also pasteurized in the homes. Supervision of the production under these conditions gives only a limited return. Home pasteurization is the logical procedure. The summer cottagers are advised by circular to do this. Food supplies other than milk are given attention in the hotels and public dining places of recreational centres. Every effort is made to ensure that the food is handled in a sanitary manner.

The annual demand for accommodation in the recreational centres of the province of Ontario, with a large number of people attracted thereto creates a health problem of real magnitude. Safe water supplies, proper sewage disposal, protected milk and food supplies, and adequate sanitary control of these centres is most desirable. Close supervision during the season seems essential for satisfactory results. The Department of Health of Ontario through its programme for these areas is endeavouring to protect the citizens of the Province as well as those who are guests from other parts.

# Fly Control in Recreational Centres

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THE pleasures of the summer, and the vacations it brings at various resorts, need not be marred by that common and troublesome pest—house flies. The presence of flies about any dwelling is a sure indication of carelessness on somebody's part and lack of attention to a few necessary precautions.

Flies found about summer camps and dwellings are of two main types; namely, the true house fly, common to all, and the blow flies. The latter are larger, have bright, metallic bodies, and make considerably more noise when flying. The stable fly also occurs at times although it is generally found about cattle and horses. In appearance it resembles the house fly. It has one distinguishing feature, however, in that it bites and sucks blood, and is especially active in this respect before storms. The true house fly cannot bite, but must dissolve its food and take it in liquid form.

The house fly and blow fly differ materially in their characteristics and life habits. They choose different kinds of food, different breeding grounds, and have different life cycles. They are alike, however, in that they are always associated with filth and decaying refuse. Their habits are such that everyone should detest their company. From the filthy garbage heap, the privy or the manure pile, they fly in eager anticipation, at the first odour of cooking, to the kitchen or dining room to be present at the initial course and there to remain to the last. It must also be remembered that the feet and body of the fly are covered with short hairs on which all kinds of filth collects, and is later deposited on the cook's finest pie or in the baby's milk jug. Moreover, the fly has a filthy habit of regurgitating or vomiting its food, and then sucking it up again, or leaving it, to have the joy of a greater variety of food. This accounts for many of the fly specks.

To effectively curb the spread and activities of flies, a knowledge is required of their life history and characteristics.

## *House Fly*

The true house fly deposits her eggs under the surface of a moist, fermenting substance. Usually about 120 eggs are laid at one time. From the egg there appears in a short while, a white maggot or larva which feeds ravenously and moves about rapidly. This is the only stage in the development in which there is any growth or feeding. As the maggot increases in size it crawls, where possible, into the earth, and the pupa stage takes place. In this a brown case appears over the partly grown fly. In a few days the end is broken off the case and the full-grown adult fly emerges, dries its wings and immediately goes in search of food. The time required to complete the process

varies with the weather and the supply of food. In hot summer it may be as short as eight days, and in about another week this fly begins to lay eggs. The blow fly passes through similar stages, but requires a somewhat longer period.

### *Breeding Grounds*

The house fly will breed in almost any kind of decaying refuse, but always prefers fresh horse manure. When this is not available the eggs will be deposited in garbage, decaying vegetable, privies, etc. The true house fly does not lay in privies to any great extent, but frequents this place chiefly in search of food.

Blow flies seldom breed in horse manure, but always prefer meat, especially fish. They will even live and lay eggs in the meat in ice boxes. They also breed extensively in garbage, decaying vegetables, privies, pig manure and various other types of filth.

### *Control Measures*

There are two distinct methods employed in controlling the fly, *viz.*, prevention of the development by means of attacking the undeveloped fly in the breeding grounds, and secondly, by destruction of the adult fly with such means as swatting, trapping, fumigating, and by the use of sticky papers and poisons. These two methods should always be employed together, but to select only the latter would be similar to repairing the wall-paper injured by rain without giving any thought to repairing the roof. A knowledge of the fly's life cycle and habits readily shows that, *any effective fly control measure must be aimed at the focal point of distribution; namely, the breeding grounds.*

All other measures can at best be palliative and supplementary to this.

Different methods of attack are required for the various types of flies, due to their selection of different kinds of breeding grounds.

The breeding in garbage and decaying refuse can best be prevented by using covered containers and burning or burying the material at frequent intervals. Mere burial of refuse after it is infested with larvae is of no use unless the maggots are first destroyed by some larvicide. For horse manure, two equally efficient methods are available, *viz.*, storage of the manure in duplicate fly-tight bins with fly traps attached or sprinkling the infested parts with a larvicide. Storage is quite applicable where there are only a few horses, but for a greater number, the boxes required are usually too large to be practicable. Storage in single boxes, as normally carried out, is quite useless inasmuch as the eggs are mostly laid in the stable before the manure is placed in the box. The fact that it is stored or even drawn away does not hinder the development, and while the fly has been transferred to some other point, it will soon travel back or to other points, and be equally troublesome. For proper storage, fly-tight bins made

in duplicate, and with a fly trap on top of each, are required. Each bin should be of sufficient size to hold ten days' supply of manure. The principle involved is that each day for ten days the manure will be placed in one of the boxes. At the end of this time this box will be left standing while the other box is filling. When the second box is filled, the flies in the first should all be hatched out and, in seeking the light, will be caught in the trap fixed to the top of the bin. This trap should be of the cone-shaped type, which can either be purchased at a hardware store or made at home. When the first box is again required, the manure may be removed and piled outside. It is important to note that the fly will not deposit her eggs in the manure which has been stored and then removed from the bin.

Where it is impracticable to use bins, a larvicide may be employed to sprinkle the infested parts of the manure. Advantage is taken of the fact that when manure is placed in a pile the larvae or maggots gradually work to the bottom edge, and their presence can readily be determined by moving the surface of the manure with a fork.

The larvicide should be sprinkled on these infested areas, and the larvæ will then be destroyed in a few minutes. Crude coal-tar distillate makes the best larvicide (Lyman Bros'. disinfectant was found very effective for this work.) A strength of three per cent is required for house fly larvæ; that is, one gallon of disinfectant to thirty-three gallons of water. The manure should be sprinkled daily or every second day. For pig manure and uncovered refuse which contain the larvæ of blow flies, the larvicide should be of five to six per cent in strength. For privies an application of a layer of chloride of lime, one-quarter inch thick, every four or five days over the fresh exposed contents of the privy, destroys all larvæ and prevents hatching.

On farms and other places where hens are kept, no better method can be found than to allow the fowl to scratch through the manure. They eagerly devour all the fly larvæ and grubs, and entirely eliminate the manure pile as a fly menace.

#### *Supplementary Methods*

The methods which may be employed in conjunction with the previous ones include swatting where the number is small, trapping, poisoning, etc. Traps of the cone shape type are best. In these the fly is attracted by bait placed under the trap, and in walking or flying upwards, passes through a small opening in the top of the cone, and through which few return. A screen wire of twenty meshes to the inch is necessary for house flies. The trap can be made at home from instructions issued by the Provincial Department of Health, or small ones can be purchased. A cheap and effective poison is made by adding three teaspoonfuls of formaldehyde (purchasable at any drug store) to a pint mixture of milk and water. This should be set about in shallow saucers with pieces of bread on which the flies can alight. Sugar may also be added to make it more attractive.

# Sanitary Supervision of Roadside Accommodation in Ontario

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**R**OADSIDE accommodation is a comparatively recently developed business created by the demand of the motoring public. Persons with limited resources for holidays plan their motor tours according to the cost of the accommodation offered. Under these conditions the costs are based on roadside rather than hotel rates. The extent of the motor trip depends largely on the cost of travel accommodation. Demands for additional accommodation have increased with the ever increasing tourist traffic in the promotion of which the good roads programmes inaugurated and carried out by the governments have been one of the most important factors. Roads previously often impassable at certain times of the year have been transformed into wide, smooth traffic ways, most of which are available for all seasons. This introduction of an extensive network of highways in Ontario has brought about changed economic conditions and has developed a tremendous volume of tourist trade to the benefit of the province as a whole.

## *Importance of Roadside Accommodation*

It is reported that in 1930, tourists spent in Canada the sum of \$280,000,000; this trade therefore has developed into one of the most important revenue producing industries. Many of the tourists are from the United States, and in 1930 it is estimated that 5,400,000 people from the republic to the south visited Canada. This number exceeded that of 1929, although the amount of money spent declined from \$215,577,000 in 1929 to \$202,409,000 in 1930. The province of Ontario, with its favourable situation in relation to the large centres of population of the United States, naturally received a very considerable share of this revenue. The unsurpassed good roads, scenic attractions, fishing, game, etc., of this province may be expected to increase the influx of tourists from year to year.

In 1924, there were about 150 motor tourist camps in the province; in 1926 there were about 350 motor tourist camps and about 650 highway refreshment booths; in 1930 there were over 600 motor tourist camps and over 1,300 highway refreshment booths. These figures show the development of roadside accommodation in the past few years to meet the demands of motorists in Ontario.

It cannot be too strongly emphasized that the facilities provided at the motor tourist camps and refreshment booths have an important bearing upon the volume of traffic; and therefore on all other industries catering to the tourist trade. The best food obtainable and served in a pleasing and most sanitary manner is essential. Not only does such service attract and increase business but it also protects the health of

the patrons and others against certain communicable diseases. The same principles apply also to sleeping accommodation and the sanitary facilities provided.

Supervision of roadside accommodation to provide safe food, safe water supplies, satisfactory toilet accommodation, suitable housing accommodation and adequate sewage and refuse disposal is a problem for local and provincial health authorities. Complaints are sometimes received regarding the food offered for sale and careless and unsanitary methods in the preparation and handling of it. These conditions may be expected owing to the comparative inexperience of many of the operators. Until such persons become familiar with present day needs and modern methods of sanitation, complaints may be expected to continue. It is the duty of the local health officer to instruct and direct wherever necessary, and it is also his duty to see that his instructions, as well as the ordinances of the municipal and provincial departments, are carried out.

#### *Legislation in Ontario*

Present Ontario legislation provides for the granting of approval certificates and banners by the Provincial Department of Health to those motor tourist camps and highway refreshment booths which comply with certain requirements. These standards are mainly concerned with safe water and milk supplies, adequate refrigeration of food supplies, fly control, and satisfactory disposal of sewage and refuse. The certificates and banners issued are for the current year only, and may be cancelled at any time for non-compliance with the regulations.

Inspections of camps and booths are carried out by the District Officers of Health, and the Engineers of the Sanitary Engineering Division of the Department. These officials, at the time of the inspections, offer suggestions in regard to the protection of the water supplies available. Samples for bacteriological analyses are also obtained. Suggestions are also made in regard to the construction and maintenance of toilet facilities as well as the proper methods of sewage and refuse disposal suitable for local conditions. Every effort is made to assist the camp and booth operator to comply with the requirements for approval. The service is free, and the co-operation of the owners is generally forthcoming in making any required changes. Where conditions are found to be unsatisfactory and the operator either refuses or fails to make the necessary changes, the local medical officer of health is so advised and he has full authority under the Public Health Act to have the premises closed to the public until conditions are brought up to standard.

Provincial legislation does not provide for licensing of tourist camps, refreshment booths or rooming houses. In certain municipalities licences are necessary for operation of such establishments and are issued and fees collected by the local authority.



*Tourist Camps*

A "motor tourist camp," as defined in the Minimum Requirements for Approval by the Department of Health of Ontario "shall be considered as any area set apart for the accommodation of motor tourists and operated with or without charge." An area set apart merely for parking cars is not considered, under the requirements for approval, a motor tourist camp. For approval each camp operator or owner must be prepared to satisfy the officer making the inspection that there is adequate supervision of the camp at all times and that satisfactory registration of all guests and car licence numbers is made. The inspector must see that facilities are provided for complying with the following requirements:

- (1) Satisfactory site in relation to drainage and environment.
- (2) Camping space sufficient to avoid overcrowding.
- (3) Safe and adequate water supply.
- (4) Sanitary conveniences of satisfactory construction and properly maintained, lighted and designated.
- (5) Satisfactory disposal of sewage, garbage and refuse.

Where additional features such as cooking facilities, sleeping-huts, laundry, bathing facilities, etc., are available for the convenience of the campers, there shall be provided proper ventilation, screening, lighting, cleanliness, safety devices, etc.

*Highway Refreshment Booths*

"A refreshment booth," according to the Minimum Requirements, "shall include any restaurant, tea room or other stand where food and refreshments are offered for sale." In these certain details must receive consideration.

## 1. Refrigeration.

Adequate refrigeration must be available where milk and meat other than canned goods are offered for sale. Only scientifically pasteurized and bottled milk should be sold. The supply of milk and meat should be such that daily deliveries to the booth are available. Modern transportation makes this feasible. Through the co-operation of the ice cream manufacturers, electric refrigeration is provided in a great many booths operated in the province. Power from the Provincial hydro-electric system is generally available. Adequate refrigeration occupies an important place in the operation of refreshment booths.

## 2. Soft Drinks.

Preparation of soft drinks at refreshment booths is fortunately not a popular practice, but where carried out only water from an approved source of supply may be used for this purpose.

## 3. Serving containers.

Approved arrangements including an abundant supply of boiling water for washing china dishes and glassware must be available in order that a booth may receive approval. In most booths paper

utensils are used and for these, as for cones and straws, protection against flies and dust must be provided. Screening of booths is highly advantageous in protection of the stock in trade against flies and dust and is becoming more generally used. This practice should be encouraged and booth operators readily agree, after installing screens, that this method of fly protection is highly satisfactory. Proper installation of screens with sliding window frames for the openings is necessary for the maximum degree of protection. Where properly installed there are sufficient openings available for speedy serving of customers during rush periods, after which these spaces are closed and disposal made of any flies which may have gained entrance.

The health of booth personnel should be carefully checked by the local officers of health from time to time.

#### *Private House Accommodation*

The "Tourist Home" signs are rapidly increasing in numbers along the highways. Sleeping accommodation and meals are usually available at "tourist homes" which are in reality private homes operated as private hotels. Some of these also operate motor tourist camps and are then classified and inspected as such by the officials of the Provincial Department. Owing to the large numbers of private houses offering "meals and rooms" it has been impossible, with the small staff and time available, for the Department to carry out inspections of these places. In many municipalities, such as the larger towns and cities, inspections are made by the local health officials and the standards of the local municipality enforced. In many of the rural municipalities, however, there is no provision made by the local officer for such inspections and, consequently, no supervision of the so-called "Tourist Homes" exists in these places.

#### *Comments*

The regulations governing the approval of camps and refreshment booths are not drastic, and there is no reason why every camp operator or owner cannot comply with them and receive approval. In 1930 only 133 approvals were issued out of a total of over 600 camps inspected. In the same year only 227 booths were approved out of a total of over 1300 inspected. Should provincial licensing be adopted, a great many of the camps and booths would, no doubt, be approved as in many cases only minor adjustments are necessary in order to comply with the standards and a little compulsion would induce the operators to take the required action. Licensing would eliminate only those camps and booths which on sanitary grounds could well be closed up. Keen competition developed during the last two or three years has had the desired effect of stimulating some of the operators to bring their establishments up to a higher standard. Many camps and booths recently opened embody every modern feature for the comfort and welfare of their patrons and at the present time it appears to be a matter of "the survival of the fittest."

# Sewage Disposal in Summer Residences

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**S**EWERAGE facilities for summer residences, boarding houses and hotels should be designed to ensure the purity of the drinking water, protect the bathing beaches, and to prevent any fly trouble or other nuisances. It is not only contrary to the Public Health Act of the Province of Ontario to discharge any polluting material into the water, but it is to the interest of every tourist and visitor to summer resorts to see that the charm and natural attraction be retained unimpaired, and that the waters may still be of pristine purity for the enjoyment of future generations.

The summer guests of to-day are exacting. They have flush closets at home and it never occurs to them that it may be difficult to dispose of sewage in the absence of sewers. The owners of summer hotels and boarding houses are confronted with the problem of providing these facilities or accepting a distinct curtailment in patronage. Disposal of these wastes is usually by means of septic tanks and sub-surface distribution through open-jointed field tile. For those who contemplate the installation of such works the Department of Health of Ontario has detailed information available for distribution. The important features to bear in mind are to provide a tank of adequate size, with plenty of tile so placed that the drainage must seep through a large area of soil before reaching the water's edge.

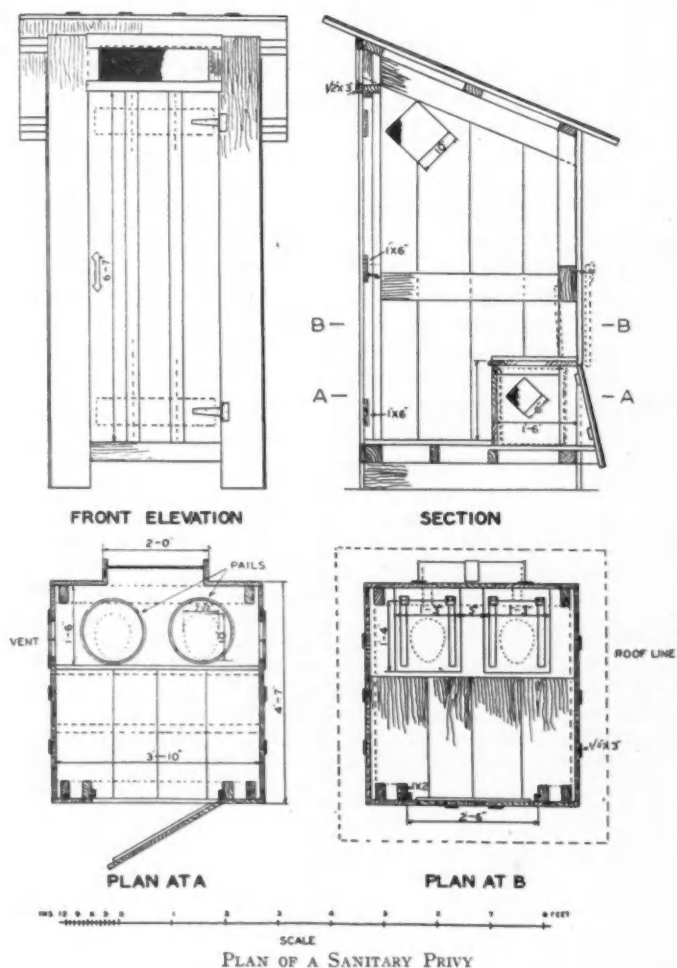
For isolated cottages or groups of cottages septic tanks are but little used, due largely to the shortness of the season, and the difficulty of installing a water supply under pressure. The adoption of the outdoor privy, under these conditions, is almost universal, and when given a reasonable amount of care is productive of little, if any, objection.

Installation of the type of privy best suited to local conditions may obviate much unnecessary trouble. Two types are in general use, namely, the pit privy and the pail, box or vault privy. The objection to the former is that it is generally a fly-breeding device, and that the privy must be moved when the pit is filled. It creates a fly menace largely because of the moisture present in the contents. In sandy, porous soil with low ground water and good drainage away from the drinking-water supply, the pit privy may be utilized, but the building should be made flyproof and a layer of chloride of lime about one-quarter inch thick should be dusted over the fresh exposed contents every four or five days. This will destroy any fly larvæ present.

The pail privy possesses some distinct advantages over the other

types. It is easily cleaned, all the material is held thus avoiding pollution of the water supply, and the fly problem is minimized. All privies should be made fly-tight, and the door weighted to ensure its closing. In addition to this, chloride of lime or coal tar disinfectant should be applied every four or five days; and a tin of ashes, earth or sawdust should be always kept available to absorb the moisture, and make handling less troublesome.

Where groups of cottages exist, it is advisable and more convenient to arrange for the regular and periodic disposal of the nightsoil by a contractor. This may be accomplished at small expense, provided the



equipment is suitable and uniform. Pails for this purpose should be galvanized, and about the size of the average garbage pail, with lid attached. Pails of this type enable the contractor to readily arrange them in a common wagon-box for removal. If the pails are removable from the rear of the privy, rather than having the seat-board hinged for this purpose, care should be taken to see that the door also is kept tightly closed.

In areas isolated from municipal sewers, night-soil is best disposed of by burial or plowing into the soil in an area where no injury will result. A convenient practice for the contractor is to plow a double furrow, deposit the nightsoil, and by drag attachment to the wagon or by plow turn in the furrows.

Nightsoil should be removed in the early morning or late at night. Unless the pails can be returned in a short period, a duplicate set will be required.

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## Skin Infections of Feet and Hands

THERE is an alarming increase in the skin infections of the feet, alleged to follow use of swimming pools, locker rooms, etc.; similar conditions affecting the hands have been connected with the use of public clubs at miniature golf courses.

A recent report on this subject has been published by the Joint Commission on Bathing Places of the American Public Health Association and the Conference of State Sanitary Engineers. The main items are as follows:

"Although such diseases are not reportable, and their prevalence is not a matter of official record, unofficial reports of the occurrence of ringworm, toe itch, toe scald, fungus foot, papilloma, and similar infections at pools and beaches in various parts of the country are becoming more and more frequent."

"Most, if not all, of these foot diseases are caused by a fungus which is spread by infection of the floors of dressing rooms, etc., at pools, bath houses, gymnasiums, and other places where persons go barefoot. While control methods have not been completely worked out, the following preventive measures will prove useful in checking the spread of these diseases:

- "1. The feet, and especially the toes, of all bathers should be inspected regularly, and those persons showing infection should be excluded from the pool and dressing rooms.
- "2. Wash all doors, benches and stools in dressing rooms, diving boards, out-of-water portions of ladders or steps, rubber mats, etc., daily with a strong solution of chlorinated lime or chlorinated soda. It is known that the fungus will grow readily on silk and cotton goods and on leather, and it is believed that it will grow also on damp wood; so special attention should be paid to disinfection of any woodwork with which the feet of bathers may come in contact. Canvas mats or pads should be abolished.
- "3. Take precautions to insure that there is no exchange of unsterilized towels, suits, bathing slippers, etc., among bathers. All suits and towels should be thoroughly sterilized by boiling before being dried for re-issue, as recommended in the last report of this committee."

*Extracted by Mary Power, B.A., Ontario Department of Health.*

# Food Control for Summer Resorts

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PEOPLE holidaying in summer resorts are dependent on others for producing, handling, curing and preserving their foods and often for preparing them for the table. As human illness frequently occurs from the consumption of infected food, food control is one of the most important problems in preventive medicine.

Food may be unfit for human consumption for various reasons,—it may come from an infected source, either animal or vegetable; it may be contaminated by those handling it or preparing it for the table; it may be contaminated by flies, mice and rats; preservatives added to the food may be dangerous; food spoilage may render it unfit; toxic products may be produced in the food; the food itself may be poisonous.

## 1. (a) *Diseases of Animal Origin*

Meat-borne: Cattle, sheep, swine and rabbits may all suffer from infections which are transmissible through the meat, to humans. The flesh of animals which, at the time of slaughter, show any signs of illness should not be used for human consumption. A system of ante-mortem inspections would prevent infection from this source. The ante-mortem inspection should be supplemented by a careful post-mortem examination of the carcass. Purchasing meat from government inspected establishments or from butchers who are under the supervision of a local food inspector thus is a safeguard. All meats should be thoroughly cooked; rare meat may be dangerous. *Milk-borne diseases* of animal origin commonly transmitted to man are bovine tuberculosis, undulant fever, septic infection and gastro-enteritis. The effective pasteurization of milk removes the danger of such infection. Where it is not possible to purchase properly pasteurized milk from a satisfactory source, home pasteurization should be carried out.

## (b) *Diseases of Vegetable Origin*

Botulism, a rare disease, is the most typical example, but vegetables may carry other more common infections. Fruits and vegetables should be thoroughly cleansed as a first step in preparation for the table. In home canning adequate heat should be used in order to ensure destruction of all organisms.

Where canned food is used, any can that does not appear normal should be discarded. A wise precaution is to remove the contents immediately on opening the can and bring the contents to the boiling point before using.



## 2. Food Infections from Food Handlers

Food may become infected by food handlers who are either suffering from, or are carriers of communicable diseases. Experience has taught us in this Province the tragedy following the dairyman who is a typhoid or diphtheria carrier. The danger of infections from infected food handlers is not confined to milk; cooked meats, vegetables or fruits, a great many of which will be consumed in the raw state, may readily be infected by carriers of disease. It must be remembered that the milk or other food may be contaminated by those preparing such foods in the home. No carriers should be allowed to handle food in any form. To guard against such infections scrupulous cleanliness, thorough and repeated washing of hands, etc., should be practised regularly. Proper pasteurization of milk, thorough cooking of such foods as may be so treated with avoidance of possible subsequent contamination will do much to control infections of this type.

## 3. Contamination by Flies, Mice or Rats

Rodents are liable to individual infection, and to extensive epidemics, caused by *B. enteriditis*, *B. aertrycke* or *B. suispestifer*. Many animals which recover from these infections remain as carriers of the disease, and thus may contaminate food with which they come in contact. The use of bacterial rat virus (living enteriditis organisms) should not be tolerated, for by its use the question arises, not as to how many of these rodents are destroyed but how many may survive and disseminate the infection. Rats and mice should not be allowed to exist around a premises. These rodents should be destroyed by the use of chemical poison or traps. The question of flies is fully dealt with in another communication in this issue. Until such rodents and flies are eradicated in the summer home all food should be zealously protected from possible contamination from such sources.

## 4. Poisonous Food

Due care should be taken in collecting mushrooms. Year after year fatalities occur as a result of eating poisonous "mushrooms". Care should also be taken not to eat water parsnips as this plant, particularly in the spring, is highly poisonous. The Department of Health of Ontario supplies, on request, printed information in regard to wild mushrooms, etc.

## 5. Food Spoilage and Preservatives

We may have differences of opinion as to just what constitutes food spoilage. Partly decomposed foods are consumed practically every day. Many kinds of cheese owe their popularity to their age and stage of decomposition through bacterial growth and action. Bacteria, therefore, in this kind of food may not necessarily be injurious,

but may add to the palatability. Every effort should be made, however, to inhibit bacterial growth in foods by proper refrigeration or canning. The use of preservatives is a questionable procedure and possibly dangerous. The use of formaldehyde, salicylic and sulphurous acid is prohibited by the Food and Drugs Act.

#### 6. *Toxic Products in Food*

Outbreaks of food poisoning have occurred where no organism has been isolated from the food. It is thought that certain of the paratyphoid organisms give off a specific poison. Experimental evidence is lacking regarding this bacterial product. Proper cooking, at any rate, will destroy such toxins if they do exist.

#### *Food Control by the Municipality*

Two or more rural municipalities could unite and employ a food inspector. Inspection of dairies producing and distributing milk, inspection of all slaughter houses and the ante-mortem inspection of all animals intended for slaughter is an urgent necessity. Fruit shops, ice cream parlours, summer hotels and boarding houses should also be inspected. Particular emphasis should be placed on the inspection of all public kitchens. Each and every hotel should be equipped with satisfactory refrigeration; food purchased should be fresh, clean, and wholesome. No public kitchen should be allowed to operate without satisfactory screening.

Whilst the municipality may have certain duties to perform in maintaining an efficient food control, the cottager should eliminate many possibilities of food infection by exercising due care. Tuberculin testing of cattle should be considered an economic necessity by the agriculturist, in order to eliminate tuberculous cattle from his herd, it does not detect cattle infected with abortion, or ones harbouring and secreting virulent streptococci in their udders. The only sane and safe procedure therefore is to use pasteurized milk. Where commercial pasteurization is not practised, home pasteurization may be carried out. All raw milk when received at a summer cottage, should be placed into a double boiler, heated until a temperature of 142° F. is reached and maintained for thirty minutes. The milk should then be immediately placed on ice. In carrying out this procedure, no possible contamination should be allowed to occur.

No food undergoing decomposition should be used. The thorough cooking of meat in order to eliminate most of the danger of intoxication or infection from this source should be practised. Food should be kept at such a temperature as to retard bacterial growth, that is, from 45° F. to 50° F. and kept free from any chance of subsequent contamination. By exercising due care and precaution in selecting and handling our food, much sickness could be avoided.

# Editorials

## TRAGEDY STALKS ON THE WATER

THREE hundred and two individuals were reported as dying from drowning in Ontario in 1929, the last year for which figures are available. The previous year, 373 persons lost their lives in this manner. Already this year the daily press report numerous casualties of this type. The age groups most affected are those between ten and thirty years, with the largest number among those from twenty to twenty-four. One-sixth of the males and one-quarter of the females were between ten and fourteen years. Thirteen per cent of the total were females.

One wonders how long this unnecessary loss of life is to go on unchecked, and what the remedy might be. It is presumed that practically all of the drownings between ten and fourteen years are due to somebody's carelessness; in fact, it is probably equally safe to presume that the majority of all drownings are the result either directly or indirectly of neglect on the part of some person or persons. It would appear that folly is exacting a heavy toll.

The factors responsible for this total are—inability to swim, foolhardiness and carelessness. What percentage of the male population, between ten and thirty, are able to swim, is not known; the majority, however, are inexpert in the art, either from lack of instruction or lack of opportunity to practise it. The bulk of those using pleasure boats are either totally unable to swim or swim so little that a distance of a hundred yards in any kind of water is their limit of attainment. The number of those drowning, despite some knowledge of swimming, is relatively large. Heavy clothing, cold or rough water, cramps, so-called, and lack of physical ability to swim the distance necessary to reach safety, are some of the reasons why average swimmers are lost. Those drowned through failure to know how to swim are greatest in the younger age group. Creeks, ponds, and even rivers and lakes have an attraction for children which, apparently, is inherent; the average boy is never happier than when playing on a raft. The dangers of such a sport are too patent to warrant more than mention; parents must either instruct their children in the art of swimming, or warn them of the dangers attendant on playing about water which is deep enough to drown the smallest of the group.

Young adults are all too prone to assume a knowledge of the art of boat handling which they do not possess. Young men and women thoughtlessly enter boats and canoes irrespective of the fact that the manipulation of such crafts is a task for an expert. Not only are they lacking in the ability to satisfactorily handle a canoe under favourable circumstances, but they have not even the vaguest idea of what to do in the event of some unlooked for emergency occurring. Even those reasonably familiar with the handling of a canoe are often foolishly influenced into taking unnecessary chances in rough water. Portaging is a tiresome task, at best, and sometimes those whose previous experience should have taught them better are persuaded to try and "run it," with the death of one or all of the party, as the result.

Not only is the average person too often ill-equipped to enjoy himself on the water, but he is, in the vast majority of instances, in no sense able to render assistance to any unfortunate who may meet with a mishap while swimming or boating. The approved method of resuscitation of the apparently drowned, is simple in technique and probably more effective than artificial respiration of a mechanical type; yet the number of persons who are familiar with it is all too small. Time might well be devoted in the secondary schools in the spring of the year to instruction in the principles of the prone-pressure method of resuscitation.

Excellent work has been done by the Royal Life Saving Society, through the Y.M.C.A. and Y.W.C.A., the organized camps, etc., in interesting children and young adults in the attainment of a measure of proficiency not only in swimming but in the saving of the life of any person in danger of drowning. Such efforts should receive every encouragement in the extension of its activities.

A realization by all interested agencies of the necessity for putting into prompt effect a concerted effort to lessen the mortality from drowning, is urged. Health and Civic authorities can do much. Ponds accessible to young children should be drained; parents residing in districts close to such bodies of water should be warned of the danger of permitting children unable to swim to frequent swimming holes, creeks, or the water front, except when accompanied by a reliable attendant. School boards and teachers might safely issue a regular warning to all children as to the danger attendant upon the frequenting of such places, unaccompanied. Facilities for teaching children how to swim should be made more readily available and, where such exists, every effort should be made to encourage their wide-spread use.

*J. T. Phair*

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# Racial Origin in Relation to Public Health Activities\*

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IN the discussion of racial origin and its effect on public health activities in Manitoba, we find a limited field for investigation, due to the fact that our population is comparatively small and some of the racial groups are only a very small percentage of the total. The figures in these individual groups showing the number of cases of communicable diseases, and the deaths from the same, are so small in the two years for which we feel we have reliable figures that the probable error might be such a factor as to discount the figures entirely. It is for these reasons we have found it necessary to group certain of the racial origins, using the 1926 census as a basis for compiling the figures, and endeavouring to so arrange the groups that people of similar habits, similar racial traits, and relatively similar geographical distribution come in the same group classification.

There are certain points which might be raised as to the reliability of the figures quoted. We realize that a two-year period is hardly sufficient from which to draw any definite conclusions, especially in reference to the case rates of the various communicable diseases being discussed, because we all know that reporting of cases of communicable disease is not all that it should be. We do think, however, that the death rates from the same causes can be taken as substantially correct.

Table I shows the total population of Manitoba, divided into the groups used for the purpose of this paper, and with the percentage that each group is of the total.

TABLE I

*Total Population by Racial Origin, Manitoba, 1926*

RACIAL ORIGINS	POPULATION	PERCENT
British.....	355,353	55.6
French.....	42,574	6.7
Northern European.....	30,669	4.8
German and Dutch.....	47,279	7.4
Southern and Central European.....	131,359	20.6
Others.....	31,529	4.9

It will be seen that, taking Manitoba as a whole, roughly 45 per cent of our population are composed of "new Canadians" of racial descent other than British.

It is interesting to note in reference to Manitoba as a whole that there is some information about tuberculosis which might throw some

\*Presented at The Vital Statistics Section, Canadian Public Health Association, Toronto, May 20, 1930.

light on the trend of this disease in the various nationalities. Table II shows the racial distribution of patients in the Manitoba Sanatorium.

TABLE II  
TUBERCULOSIS  
*Distribution of Patients of Certain Racial Origins*  
*Manitoba Sanatorium, January 1, 1930*

RACIAL ORIGINS	PERCENT OF TOTAL POPULATION	PERCENT OF SANATORIUM POPULATION
French Canadian.....	8.7	10.8
German and Dutch.....	7.4	4.1
Scandinavian.....	4.8	8.2
Slavic.....	15.9	16.4

Dr. D. A. Stewart, to whom we are indebted for these data, in submitting these figures, qualifies them as follows: "The patients of various races in the sanatorium under treatment at any given time represent only roughly the amount of tuberculosis amongst these races. For instance, Indians who are in our borders, are not at all represented among our sanatorium patients, except in people with mixed blood. In spite of their fairly high proportion amongst sanatorium patients, it is doubtful if French Canadians, or even Central Europeans, seek treatment in quite the same proportions in which the diseases might be found among them. Certainly one group of the Germanic race, the "old" Mennonites, do not seek treatment in proportion to their need of it, and do not persevere in it as other races do. The "new" Mennonites are quite different in both these respects. No persons at the sanatorium are more careful about beginning the cure, or more earnest in following it than are the Scandinavians. It can easily be seen, then, that the proportions of these various peoples under treatment at the sanatorium are not quite the proportions in which they, as a people, suffer from tuberculosis." There is an added difficulty in the collection of statistics of the mixture of races in the Canadian "melting pot."

In further discussion of this table with Dr. Stewart, he intimated that we would likely continue to find a high tuberculosis rate amongst people of foreign extraction, especially during their first few years in our country, although none of the races making up our population, with the exception of Indians and Scandinavians, show any marked susceptibility to the disease. With these "new Canadians," the new surroundings, poor living conditions, a strange language and, in general, the struggle to get along, lower the resistance so that they become a fertile ground for the activation of old tuberculosis lesions or the entrance of new infection.

As the figures we have in reference to communicable diseases among people of different racial origins, refer only to the province, exclusive of Winnipeg, the distribution of this population is shown in Table III.



We see by this table that nearly half our population in rural Manitoba is composed of "new Canadians" of other than British descent. It is interesting to note that these new Canadians have settled for the most part in the newer, or outside portions of the province. There are a few exceptions to this, particularly among the people of French origin, and also in reference to one settlement of German and Dutch descent. The fact that most of these people are in the outlying districts further complicates public health activities.

TABLE III

*Population by Racial Origin in Manitoba  
(Exclusive of Winnipeg)—1926*

RACIAL ORIGINS	POPULATION	PERCENT OF POPULATION
British.....	232,317	51.9
Southern and Central Europeans.....	100,056	22.4
French.....	38,360	8.6
German and Dutch.....	38,330	8.5
Other Northern Europeans.....	22,439	5.1
Others.....	15,263	3.5
	446,765	100.0

In trying to estimate the prevalence of communicable diseases among these various racial groups it is felt, for the sake of reliability, that only the four major communicable diseases should be investigated, namely, diphtheria, scarlet fever, typhoid fever and smallpox, as probably these are the only diseases for which reporting is in any way complete.

Table IV shows the case and death rates from these four diseases in the various groups, as well as the average for the province.

TABLE IV

COMMUNICABLE DISEASES IN MANITOBA, 1928-1929

*Yearly Average Case and Death Rates of Certain Communicable Diseases per 100,000  
Population in Selected Racial Groupings*

Group	DIPHTHERIA		SCARLET FEVER		SMALLPOX		TYPHOID	
	Case Rate	Death Rate	Case Rate	Death Rate	Case Rate	Death Rate	Case Rate	Death Rate
Province, exclusive of Winnipeg.....	71.7	9.8	123.8	3.1	19.5	0	16.0	4.7
British.....	71.5	8.8	170.0	3.4	20.0	0	14.4	4.7
French.....	221.6	22.2	63.7	1.3	30.0	0	24.0	7.8
German and Dutch.....	65.2	13.0	143.5	5.2	58.7	0	44.4	9.1
Scandinavian.....	37.9	2.2	75.8	0	2.2	0	17.8	6.7
Sou'n and Cen'l Europeans.....	36.0	9.5	62.0	3.5	6.0	0	7.5	2.0

### *Group of British Descent*

The first group for consideration is that section of our population which is of British descent. From a public health standpoint, this group can be dismissed without much discussion, as it shows fairly favourable rates for the various diseases, and I do not think it presents any special problems, with the single exception of vaccination. One would be safe in saying that 95 per cent of the anti-vaccinationists,

and all propaganda of this nature come from this group, and I think this is possibly indicated in their rate for smallpox.

One other point we have to remember about this group is that they, as a rule, form the bulk of our pioneers, and usually are the first to settle any new "promised land." This fact gives us some problems from a public health standpoint that mainly concern sanitation.

#### *Group of French Descent*

The next group is that composed of people of French descent. We notice in this group that, with the exception of scarlet fever, the case and death rates in all the diseases under discussion are considerably higher than the average, particularly diphtheria. There is hardly a settlement of these people in the province which does not have, during the winter time, a more or less serious outbreak of this disease, and when diphtheria enters into one of these households it infects all those who are not immune. It is hoped, however, that we will have a marked improvement in the rates for diphtheria during the next few years, as the municipalities composed principally of French-Canadians are taking up immunization against diphtheria by the use of toxoid very rapidly.

We think the high rates for communicable diseases among these people are due to the following reasons: overcrowding, inadequate sanitation and the difficulty of providing isolation when illness occurs in the home.

#### *Group of German and Dutch Descent*

The most interesting group, from a public health standpoint, is that composed of German and Dutch descent. We find in our settlements of Mennonites in Southern Manitoba, that they are living under practically the same conditions as obtained when they first settled in our province some forty years ago. In other words, we find in the majority of the farm homes that one building contains both the living quarters for the humans and also the quarters for the animal population. It might also be pointed out that the privies in these instances, if they have one, are either located in the barn, or attached to it, so that there will be no necessity for these people going out of doors in the cold weather. This may be of advantage during our rigorous winters, but it certainly has its disadvantages during the warm weather, especially as, I am informed, it is a common practice to keep the door between the house and barn open for the sake of fresh air.

Under such living conditions one would expect that certain diseases would show particularly high rates. We refer to those of gastrointestinal origin, particularly typhoid. You can see, by comparison, that we have a typhoid rate among these people of practically three times that of rural Manitoba as a whole, and a death rate twice as great.

We also find that the smallpox rate is high, and that the death rate from diphtheria is above the average. It is a fact well-known to health

officers, who work among these people, that, while they do not seem particularly susceptible to diphtheria, the death rate from this disease is very high, owing to the fact that illness from any cause is not attended to as promptly as it should be.

Another group of German origin is a religious sect known as Hutterites. These people live and work in self-contained villages. They live, as a rule, in dwellings which contain several families under one roof. These are very similar to the ordinary tenements of the city.

We have found in these particular settlements that the diphtheria death rate is very high. On one occasion we took it upon ourselves to order the immunization of all children in one of these colonies. So far, the experiment has been a success and, as occurrence of other outbreaks gives us opportunities, the other colonies of this description in the province may be immunized in a similar manner.

With these people, however, we hope, by education among the younger generation, to bring them in time to a standard comparable to that of our population of Canadian and British descent.

#### *The Group of Southern and Central Europeans*

The particular problems we have with the group composed of Southern and Central Europeans is our inability to enforce the everyday public health regulations, such as isolation, quarantine, etc. It would appear that this type of people, when they leave their old homes, and the oppression under which they have had to live is removed, imagine, because our laws are reasonable, that we are easy, and they do not have any compunction in breaking our regulations, especially those in reference to quarantine, etc. We are finding, however, that by a firm stand we are able to inculcate in the minds of these "new Canadians" some respect for the Health Act, and its regulations.

There is one particular feature about these people that commends itself from the public health standpoint, and this is indicated in the table of disease rates. I refer to their desire for vaccination. They will go out of their way to have their children vaccinated and, as a result, we find that this group in our population shows the lowest case rate of any in reference to smallpox.

#### *Scandinavian Group*

The group which, from every public health standpoint, is the best amongst our people, is that composed of Scandinavians. They show lower rates in every instance in the four diseases under discussion, with the exception of typhoid. The higher typhoid rate can, I think, be explained by the fact that the male population of this group belong mostly to the outdoor labouring class, such as fishermen, lumbermen, etc., and are, therefore, more exposed to this infection than the average person of our population. If from no other standpoint than that of public health, the desirability of an increased quota of these people among our immigrants is indicated.

Their homes, living conditions, etc., are practically the same as those of our Canadian people. Their first endeavour on their arrival among us is to learn the English language, and the English ways, and it is probably on this account they are so soon assimilated.

#### SOLUTIONS

- (a) Adequate reporting of disease among the various racial origins, preferably on a form which indicates the racial origin.
- (b) Some means whereby deaths from communicable disease can be reported to the division responsible for its control immediately such deaths occur.
- (c) Intensive education of the various nationalities, preferably by Canadian trained workers of the racial origins to be educated.
- (d) Distribution of settlements of these various groups and the scattering of them throughout the predominant nationality; in other words, to bring into actual being the oft-used phrase, "the melting pot."

#### CONCLUSIONS

1. The composition of a population of various racial origins complicates the activities of a health department.
2. In outlining a public health programme for any community consideration must be given to the racial origin, or origins, comprising the community population.
3. Various racial origins present special problems which require special consideration, and often special remedies.
4. Nationalities more closely resembling British, and coming from a similar stock, and having had a closely similar environment, present the least problem in a predominantly Anglo-Saxon state.

REPORTED CASES OF CERTAIN COMMUNICABLE DISEASES IN CANADA\*  
BY PROVINCES—APRIL, 1931

Diseases	P.E.I.	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Diphtheria....	—	22	12	112	118	14	21	13	22
Scarlet Fever...	1	56	9	280	502	53	38	36	36
Measles.....	—	20	1	1873	228	705	369	70	8
Whooping Cough.....	—	43	23	147	319	29	30	14	158
German Measles....	—	—	—	43	67	†	7	3	5
Mumps.....	—	12	35	62	398	293	14	42	163
Smallpox.....	—	1	—	—	12	—	61	—	—
Cerebrospinal Meningitis..	—	6	1	1	4	3	—	1	1
Anterior Poliomyelitis	—	—	—	—	—	—	—	1	2
Typhoid Fever	—	—	1	79	24	10	3	—	2

\*Data furnished by the Dominion Bureau of Statistics, Ottawa.

†Not reportable.

# NATIONAL VOLUNTARY HEALTH AGENCIES

ETHEL GREENWOOD, REG.N.

## MENTAL HEALTH PROMOTION IN CANADA

THE promotion of mental health is a state responsibility rather than a private one. That this is not generally realized is the principal reason for the continued existence of The Canadian National Committee for Mental Hygiene. During the past year, however, an encouraging advance in public appreciation can be noted of mental hygiene as a constructive social force.

In Ontario the outstanding event in mental health promotion was the Report of the Royal Commission on Public Welfare, and the reforms that have resulted from it, notably the transfer of mental health from the Provincial Secretary's Department to the Department of Health; the appointment of Dr. Bernard T. McGhie as Director of Hospital Services; and the establishment of out-patient clinics at seven different points throughout the province.

In Quebec, the Mental Hygiene Institute of Montreal, representing McGill University, the Montreal Council of Social Agencies, and The Canadian National Committee for Mental Hygiene, has continued its combined clinical, educational, and research programme. In addition to this, the Quebec Section of The Canadian National Committee for Mental Hygiene, under the direction of Dr. A. H. Desloges, Director of Medical Services, Hospitals for the Insane, Province of Quebec, has been responsible for the extension of the psychometric examination of children in the Montreal

schools, and for the initiation of steps towards the establishment of special classes for retarded children.

Nova Scotia has gone quietly ahead implementing the provisions of the Report of the Royal Commission of 1926. During the past year the second unit of the training school for mental deficients has been completed at Brookside, near Truro, and is now occupied.

Experimental projects in mental hygiene, financed jointly by The Canadian National Committee for Mental Hygiene and the respective provincial governments, are being continued in Alberta and Saskatchewan; and The Canadian National Committee for Mental Hygiene is co-operating with the provincial government in British Columbia by supplying for one year the services of a psychiatric social worker in connection with the mental hospital at Essondale. In Alberta and Saskatchewan, commissioners have been appointed to direct mental health work; three out-patient clinics are being operated in Alberta; and in Saskatchewan a psychopathic ward has been opened in connection with the Regina General Hospital.

A source of gratification is the appointment of Dr. Hincks to be General Director of the (U.S.) National Committee for Mental Hygiene, which cannot result otherwise than in the unification of mental health promotion facilities on a continental basis. Dr. Hinck's going to the United States has not robbed Canada of his ser-

vices, since he still retains his connection with the Canadian Committee, and spends part of his time in Canada, and it has, on the other hand, brought more fully into the mental

health field Dr. Grant Fleming, Professor of Public Health and Preventive Medicine, McGill University, who has become Medical Director in Dr. Hinck's stead.

## NEWS AND COMMENTS

P. A. T. SNEATH, M.D., D.P.H.

### W. K. Kellogg Foundation

THE establishing of the W. K. Kellogg Foundation through the munificence of Mr. W. K. Kellogg of Battle Creek, Michigan, is a mark of the ever increasing interest of public benefactors in advancing community and personal health. Mr. Kellogg, who, through the unique success of his business, is now making possible this new Foundation, has had a lifelong interest in the welfare of children. It is natural, therefore, that in defining the purposes for which the gift is to be used, he has had in mind one objective, child health and welfare. Under the able leadership of Dr. Stuart Pritchard, who has been appointed medical director of the Foundation, attention is being given to the problems of the rural school child. As a first step in providing an adequate health programme for rural school children, the building of central schools by the consolidation of small county school districts is essential. A central school can be constructed, supplying adequate facilities, including vocational training. Such a consolidated school building with its modern equipment, gymnasiums, etc., serves as a social, civic and community centre. The Foundation desires to demonstrate the value of an adequate programme of health supervision for children in such schools and to this end it offers to supply the necessary health service for a limited period to selected schools. The value of such services will, it is believed, be so appreciated by the people of the district

that they will continue to support the work at the conclusion of the demonstration period.

It is unnecessary to state that the health supervision will be adequate in every respect. It will be directed in each instance by a competent physician with sufficient nursing personnel to permit of supervision of children in their homes as well as for the conduct of the work in schools. Dr. Pritchard has emphasized the relation of the family physician to such a programme. The Foundation will not undertake the work without the approval and promised co-operation of the local medical society and all matters of procedure are to be discussed with its executives. The work of the Foundation will not be limited to the United States, but will extend to Canada, Australia and other countries. It is gratifying indeed to learn that steps are being taken to initiate the work in Canada as many opportunities for such demonstrations will be possible.

### Saskatchewan

THE medical profession in Saskatchewan has again been honoured by the appointment of Lieutenant Colonel Dr. H. E. Munroe, O.B.C., V.D., F.A.C.S., of Saskatoon, as Lieutenant-Governor. Dr. Munroe went to Saskatoon in 1904 and has contributed very largely to the development of hospital services in Saskatchewan. During the war he served in France in 1915 and was later transferred to the Dardanelles. Later he contracted fever in Egypt and was in-



valided to England. Returning to Saskatchewan he organized the Saskatchewan Medical Unit, which he later commanded in France, becoming A.D.M.S. to the Independent Air Force in the south of France.

The Gordon Bell Memorial Lecture was delivered this year by the Honourable Dr. E. W. Montgomery, Minister of Health and Public Welfare. Dr. Montgomery presented the life and work of the late Dr. Gordon Bell.

#### Manitoba

**F**OLLOWING a request from the Honourable Dr. E. W. Montgomery regarding the proper fee for toxoid administration, the Executive Committee of the Manitoba Medical Association at a recent meeting decided that the maximum fee for rural schools be \$1.50 per child and for schools of 100 or more \$1.00 per child unless under exceptional circumstances.

The Medical Service Committee made the statement that 503 physicians in Manitoba gave on the average \$2,009.00 per annum in free services.

#### Ontario

**A** ROYAL COMMISSION, under the Chairmanship of the Honourable Dr. H. J. Cody, has been appointed to enquire into a treatment of cancer, with particular reference to the value of radium. Dr. Cody will have as his assistants on the Commission, Professor J. C. McLennan, Director, Department of Physics, University of Toronto; Dr. W. T. Connell, Professor of Medicine, Queen's University; Mr. Arthur Ford, Managing Editor of the London Free Press; and the Honourable Dr. J. M. Robb, Minister of Health. The Commission plans to visit England during the latter part of July and later various centres on the continent. A study will be made, also,

of prominent laboratory centres in the United States.

The new Watkins wing of the Kingston General Hospital group of buildings was recently opened, completing the plan of reconstruction of Kingston's hospital facilities. The total cost of the reconstruction, which was commenced in 1920, and which has now been completed, has been approximately \$1,500,000.00. The Honourable Dr. J. M. Robb, Minister of Health, formally opened the new wing on May 12th.

At the Annual Meeting of the Canadian Council on Child and Family Welfare, Mr. J. F. Davery of Ottawa was elected President, succeeding Mrs. C. B. Thoburn, who had served the Council as President for the past seven years. Dr. H. E. Young, Victoria, B.C., and Mr. F. N. Stapleford, Toronto, were elected Vice-Presidents for 1931. Mrs. Jules Tessier was appointed Treasurer and Miss Charlotte Whitton, Ottawa, was again appointed Executive Director of the Council.

The objective of transferring activities from institutional care of orphan children to the care in individual orphan homes has been now accomplished in Toronto by the Protestant Children's Homes Association. The use of a small house only is required, containing clinic room, clothes storage room, one emergency bedroom and offices. The cost of maintaining a child in a boarding home was ninety-five cents, being a reduction of ten cents a day over last year. During the year 322 applications were made for the care of foster children. Of these, 103 were approved. At present 213 children are being cared for.

#### Quebec

**A**RRANGEMENTS for the 60th Annual Meeting of the American Public Health Association to be held in Montreal, September 14th to 17th

are rapidly being completed. The Chairman of the Local Committee for arrangements is Dr. S. Boucher, Health Officer of Montreal. Mr. Aimé Cousineau, City Sanitary Engineer, is acting as Secretary of the Local Committee. Dr. A. Grant Fleming is Chairman of the committee on entertainment, Mr. T. J. Lafrenière of inspection trips, Dr. McCrady of information and registration, Dr. Starkey of membership and Dr. Chandler and Dr. Beaudoin of publicity.

#### New Brunswick

TO aid in the support of hospitals and charitable institutions in New Brunswick, a Bill was introduced by the Provincial Secretary-Treasurer imposing a tax of 5 per cent on the price of each meal, costing \$1.00 or more, served to the public in hotel or restaurant.

#### Nova Scotia

THE Annual Meeting of the Nova Scotia Health Officers' Association will be held at Truro on July 7th, 1931. At the afternoon session Dr. W. B. Hendry, Professor of Obstetrics and Gynaecology, University of Toronto, will speak on maternal mortality. A public meeting will be held in the evening under the chairmanship of Dr. W. F. MacKinnon, President of the Association, and addresses will be given by the Honourable Dr. G. H. Murphy, Minister of Health, and Dr. Hendry.

Dr. George A. MacIntosh has been appointed Superintendent of the Victoria General Hospital to succeed the late Dr. W. W. Kenney. The appointment of Dr. MacIntosh is warmly commended by the members of the profession in Halifax and throughout the province.

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## OBITUARY

#### LT.-COL. DR. C. M. LAURIE

FOLLOWING an illness of three months, Lieutenant-Colonel Dr. C. M. Laurie, Medical Officer of Health for Port Arthur, passed away on April 19th. Dr. Laurie was born in Barrie. He commenced the practice of medicine in London, coming to Port Arthur 29 years ago. He had been Health Officer of this City since 1903, continuously serving in this position, developing for Port Arthur an outstanding Department of Health. Colonel Laurie was organizer and first O.C. of the 96th Lake Superior Regiment, taking an active part in all military matters in this military district.

#### DR. VICTOR H. McWILLIAMS

The sudden death of Dr. V. H. McWilliams deprived the Department of Health, City of Toronto, of a valued officer. Dr. McWilliams was born in Port Perry 54 years ago. He was a graduate of the University of Toronto. In 1920 he was appointed District Medical Officer in the Department of Health, Toronto. Dr. McWilliams had a splendid record of war service, serving in Egypt, France and Siberia. He was widely known in sport circles, being an ardent bowler and curler, and in his early days was a prominent lacrosse and hockey player.

## Books and Reports

D. T. FRASER, B.A., M.B., D.P.H.; R. R. McCLENAHAN, B.A., M.B., D.P.H.

**Edward Jenner and the Discovery of Smallpox Vaccination** — By *Louis H. Roddis, Lieut. Commander, Medical Corps, United States Navy. Publishers, George Banta Publishing Co., 450 Ahnau, Menasha, Wisconsin, 1930. Pages 155. Price, cloth \$1.00.*

The horrors of smallpox are unknown to this generation and this book of 155 pages comes as a very useful reminder of the great importance of vaccination. Its brevity and manner of treatment make it a most suitable book for both the medical profession and the general public who desire a concise and interesting account of the history of smallpox and vaccination.

The chapters deal with smallpox in Jenner's time, the life of Jenner, giving an account of his discovery of vaccination and the spread of its practice. There are included a number of very interesting letters between John Hunter and Jenner on the subject. There is also a bibliography, and a list of Jenner's published works. The book is illustrated.

The proof-reading has been carelessly done, but the few errors in date, etcetera, are so evident that they are not misleading.

G.D.P.

**Facts and Figures About Tuberculosis**—By *Jessamine S. Whitney, Statistician, National Tuberculosis Association, 370 Seventh Avenue, New York City, 1931, 63 pages. Price, fabrikoid cover, \$1.00, paper cover .75c.*

These "facts and figures" contain vastly more information and more reliable information than do the majority of publications of a more pretentious character. According to the foreword, the aim is "to answer the oft-repeated request, 'Please send me all statistics on tuberculosis'." While it does not include all the available figures regarding tuberculosis, its purpose is to give the statistical high points of the main phases of the subject and to serve as a useful reference book to all those who are interested in this public health problem". Certainly the aim has been achieved both in the material presented and in the character of its presentation.

The chapter headings, as follows, give some idea of the scope,—decline in the death rate, sex and age, colour, nationality, occupation, geographical distribution, relation to other diseases, tuberculosis infection, forms of tuberculosis, organization, sanatoria, clinic facilities, nursing service, financial support for anti-tuberculosis work.

The reasonable questions that might be asked under the various headings are answered by actual figures, carefully and clearly analyzed, and rendered easy of assimilation by simple, but highly instructive diagrams. There is complete dearth of personal opinion, useful or otherwise, that is not entirely supported by all available data. In other words, there is no useless padding to mislead either the author or the reader.

This publication may well be used

as a model for the presentation of "facts and figures" in contrast to fads and fancies, in regard to other diseases. No one engaged in any branch of public health activity should be without it. Every physician should read it.

N.E. McK.

**The Vitamins**—By H. C. Sherman and S. L. Smith, *American Chemical Society Monograph Series, Chemical Catalog Company, New York*, 1931. 575 pages. Price, \$6.00.

A number of the monographs in this series have been valuable contributions to biochemical literature and this comprehensive and well-written volume may deservedly be included in this number. It is more chemical in tone than some other books on the vitamins, but it should be useful to all interested in nutrition. The readability of the type is a pleasing point.

The contents of the volume are arranged differently than in other books on the subject. Each vitamin is treated separately with no attempt at unification. For this the authors make an explanation which is probably unnecessary since it is apparent to any one interested in the field that the diversified chemical and physiological properties of the vitamins render a unified treatment unwise. However, the evidence accumulating as to the inter-relationship of the vitamins in nutrition makes more than

the compartment method of discussion advisable.

On vitamins B<sub>1</sub>, C and A the chapters are admirable, but those dealing with B<sub>2</sub> and D seem incomplete, perhaps because it is impossible to include everything in the space available. It is by no means clear to the reviewer that the lack of vitamin B<sub>2</sub> is the cause of pellagra, yet other explanations are minimized by the authors. In discussing vitamin D, mention might have been made as to overdosage results with irradiated ergosterol. To a reviewer in this country it is gratifying to find such extended space devoted to British methods of standardizing antirachitic preparations, but for a book published in the United States, one feels that more space might have been devoted to the procedure recommended by the American Medical Association, even if it is unsatisfactory. The fairness with which credit is distributed to various authors for work on activation of ergosterol, is highly commendable.

Approximately one-third the book is given to the bibliography which covers the bulk of the vitamin literature to the middle of 1930. In some references familiar to the reviewer there are inaccuracies, but the list will be most useful. Its value is enhanced by being included in the general index.

E. W. McH.

## BOOKS RECEIVED

*International Studies on the Relation Between the Private and Official Practice of Medicine with Special Reference to the Prevention of Diseases, Volume I.* By Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P.

*Health on the Farm and in the Village.* By C.-E. A. Winslow, Dr. P. H.

*Resistance to Infectious Diseases—Fourth Edition Completely Revised and Reset.* By Hans Zinsser, M.D.

## CURRENT HEALTH LITERATURE

*These brief abstracts are intended to direct attention to some articles in various journals which have been published during the preceding month. The Secretary of the Editorial Board is pleased to mail any of the journals referred to so that the abstracted article may be read in its entirety. No charge is made for this service. Prompt return (within three days) is requested in order that the journals may be available to other readers.*

**Diet and Health**—Four years ago the British Medical Association established the Hastings Lectureship as a tribute to the life and work of Sir Charles Hastings for the presentation yearly of the Hastings popular lecture. In this address Dr. Mellanby reviews in a most interesting manner the essential facts. "What then is wrong with the English diet?" he asks. "In brief, it is wrong because it contains too little protective dietetic factors such as are associated with vegetables, milk, cheese, etc., and it contains too much cereal."

Mellanby, E., *Brit. Med. J. Supplement*, No. 3663 (Mar. 21), pp. 85-92.

**The Mental Causes of Child Accidents**—As external causes today account for more deaths than any one disease in the school child, this paper will be read with a great deal of interest. "Recent studies of accidents to children have thoroughly convinced us that the most important approach to the problem of accident prevention among children is that of mental hygiene. We have too often assumed that by giving the child certain information about the dangers of his environment and by encouraging good safety habits in him, we were answering all the needs of safety education. But we have been finding that in spite of safety lessons and habit formation, accidents are still increas-

ing. It appears that there is another approach that has been too often neglected." The writer deals with the worthwhile child, the adventurous child, the tired child, the independent child, and also the rebellious mind. Interesting and convincing matter—well worth reading.

Stack, H. J., *Mental Hygiene*, v. XV, No. 2 (Apr.), pp. 283-289.

### **Maintaining a Balanced Programme in County Health Work**

Four factors are indicated for maintaining "a balanced programme" in this work, (1) definition of problems, (2) fitting of resources to problems, (3) use of the Appraisal Form, and (4) well-planned programmes of work. The primary function of the health department is given as the control of communicable disease. Other functions are of secondary importance. Among the communicable diseases, tuberculosis, diphtheria and typhoid are predominant. The writer points out how the resources must be used to attack such major problems. "It is useless," as he says, "to hunt lions with a sling shot". The Appraisal Form, the third factor, will assist in properly distributing the available resources. A well-planned programme is one of the essentials in carrying out county health work. This is well worth reading.

Roberts, F. L., *Pub. Health Rep.*, v. 46, No. 19, (May 8), pp. 1076-1084.

**The County Health Unit of Yesterday and To-day**—A review of county health work since the first full-time unit was established, in 1911, until the end of 1929, at which time there were 505 units in operation in the United States. Dr. Foard shows how the general mortality rate, tuberculosis rate, infant mortality, typhoid fever and diphtheria death rates have been reduced in the same period of time. He concludes "With such an enviable record to look back upon, the public health field has greater progress to look forward to and to work for in the future. Although many of our public health executives are still handicapped by lack of funds to carry on rapidly expanding programmes, it is nevertheless true that the health officer who possesses the qualifications of leadership, statesmanship, and organization ability, can frequently overcome handicaps which would otherwise completely retard his progress. We should therefore continue to carry on with ever broadening viewpoints of the rapidly growing and fascinating field of public health administration. The old adage 'There is more in the man than there is in the land', is just as true of the field of public health as it is in farming, or in any other line of endeavour."

Foard, F. T., *Pub. Health Rep.*, v. 46, No. 17, (Apr. 24), pp. 970-977.

**Chronic Pulmonary Infections in Childhood** — An excellent article from an authority. Dr. Krause points out that the guiding principles of treatment of the minimal process, in view of our present therapeutic re-

sources (or lack of them), will be that regimen in that environment that reduces to a minimum the chances of catching fresh colds or of acutely exacerbating the focus. The standard winter climate is the dangerous element for these patients. They do badly, and repeated activations wipe out all possibilities of healing. At present there is reason to believe that, if taken in hand early enough and if allowed long enough periods of quiescence, many of these foci may attain permanent arrest and healing.

Krause, A. K., *Tubercle*, v. XII, No. 8 (May), pp. 344-359.

**Diphtheria Incidence and Immunisation**—"The greater the number of clinical cases of diphtheria the greater will be the numbers of carriers of both classes. The greater the number of children protected, the fewer will be the number of carriers of both classes. Prevent the creation of carriers by preventing the occurrence of diphtheria cases. This can only be done by the systematic immunisation of the whole child population. Severe smallpox was conquered by the enforcement of vaccination in the past. Diphtheria can be eliminated by general community immunisation, provided that its application is maintained in the future, when diphtheria has ceased to be the endemic and epidemic danger that it is at present." As applicable to Canadian conditions as to any other country where diphtheria remains one of the chief public health problems.

Chesney, G., *The Medical Officer*, v. XLV, No. 19, (May 9), pp. 217-219.



